VOL. II. AUGUST, 1872. No. 4.

THE

KANSAS CITY

MEDICAL JOURNAL.

E. W. SCHAUFFLER, M. D.,
EDITOR.

PUBLISHED BI-MONTHLY.

TERMS—$2.00 PER ANNUM IN ADVANCE.

KANSAS CITY, MO.:
KANSAS CITY BULLETIN, STEAM PRINTERS AND ENGRAVERS.
1872.

CONTENTS:

THE KANSAS CITY

MEDICAL JOURNAL.

AUGUST, 1872.

Observations on the Corrective Influence Exerted by the Bromide of Ammonium on the Action of Quinia.

By H. C. Beall, Coloma, Mo.

The bromides are generally conceded to possess the property of diminishing the supply of blood to the brain, and the peculiar sedation which that exhibition produces on the nervous centers, in some irritable conditions of the cerebro-spinal system of nerves, has long been known and appreciated by the medical profession. Yet the corrective influence exerted by them on the deleterious action of other agents seems to have been little studied. True it is that Dr. Da Costa, of Philadelphia, has studied to a considerable extent the corrective influence exerted by the bromide of potassium on the action of opium and its alkaloids, yet he seems to have confined his observations to those two agents alone. He has ably shown, by a series of carefully conducted experiments, the undoubted increased influence for good exerted by the two drugs when given in combination; and has clearly established the fact, that the union of these two seeming incompatibles exerts a sedative influence on the human system that neither of them accomplishes when given alone. The result of his observations may

be found in the *American Journal of the Medical Sciences* for April, 1871.

This fact being established, does it not follow, as an axiom of therapeutics, that two agents possessing the same general properties of the two drugs in question may be combined with advantage? Acting upon the principle just stated, I commenced about two years ago the study of the effects of quinine and bromide of ammonium, with a view of determining, if possible, whether the combination would have the effect of alleviating the distress following the use of quinine. I have found that in many cases, by the use of the two agents in combination, I have succeeded in entirely preventing the cinchonism that usually follows the use of quinine in quantities sufficient to destroy the malarious influence; and, in cases wherein it did not entirely succeed, its influence was clearly seen, the intensity of the cerebral excitement being sensibly diminished. I have also found that the bromide of ammonium exerts less influence on those cases that had repeatedly taken quinine in quantities sufficient to produce severe, and often repeated, cinchonism; yet even in such cases it has not proved entirely powerless. In no case has it apparently diminished the effect of the quinine, but, on the contrary, has seemed rather to serve as an auxiliary to its action, by holding in check the nervous system, equalizing the circulation, and thereby affording a more favorable condition of system for the action of the anti-periodic. I have invariably used the bromide of ammonium in preference to the potassium salt, for the reason that a smaller dose is sufficient, its effects are sooner obtained, and the liability to gastric irritation is much less. I have never found that the ammonium added, in any degree, to the nausea and vomiting usually seen in such cases; but, on the contrary, it frequently seemed to act as an efficient gastric sedative, allaying the nausea and vomiting, and thereby enabling the stomach to retain quinine when otherwise, perhaps, it would have been rejected. I will now give the history of a few cases as they occurred in practice, treated in this manner.

Geo. R——, æt. 13. First saw him July 6th, 1871; found him suffering from an attack of remittent fever, this being the

second day. There was great febrile excitement, intense headache, some delirium during the exacerbation of fever. His father, an intelligent Presbyterian clergyman, informed me that it was no unusual thing for him to be delirious when he had fever. Gave at once, without waiting for a remission, the following prescription—that is, as near as I could guess, it being in the country and having no means at hand of weighing: ℞ Quiniae Sulphatis, gr. xij.; Ammonii Bromidi, grs. viij.; Pulv. Opii et Ipecacuanhae, gr. ij.; M. ft. Chart., No. viij. Dose—one every three hours. Other treatment as indicated—cold water to the head, etc. 7th—Has had a remission, but still has considerable fever; has been somewhat delirious; still continue treatment. Complains of none of the symptoms usually attributed to quinine. 8th—Had a well marked remission last night, but to-day has considerable fever; no symptoms of cinchonism; still continue the treatment. 9th—Has had a remission of greater length than at any time during his sickness; still has fever; no signs of cinchonism; still continue treatment. 10th—Feels very comfortable; but little fever since the day before; complains of nothing that resembles the unpleasant effects of the quinine in the least—no dizziness, no singing in the ears nor deafness. Now here was a case, presenting the cerebral symptoms of remittent fever in a clearly marked degree, recovering without any of those untoward effects which usually follow such cases. Had I treated him with quinine, to the extent which I did, without the addition of the bromide, I think I should have had a series of unpleasant effects following the free use of the quinine that would have been very troublesome.

Case No. 2.—Benj. P——, Jr., æt. 22. Saw him first August 14th, 1871. Found him suffering from remittent fever, attended with nausea and vomiting, severe headache, fever running high, he being rather plethoric. Gave at once the quinine and bromide in about the proportion of three grs. of quinine and one of the bromide, a powder every three hours, without waiting for a remission. Gave such other treatment as seemed to be appropriate. 15th—Has had a remission, but now at the time of my visit, has considerable fever; still complains of headache, but no symptoms of cinchonism; continue treatment. 16th—

Had a good remission last night, but has some fever to-day; does not complain of the quinine; treatment continued. 17th —Has had but little fever since yesterday; feels very well; does not complain of cinchonism. Now, during the three days of active treatment, this young man must have taken at least one drachm of quinine, at a time when he was parched with a raging fever, without complaining of the cerebral excitement usually attending the free exhibition of this drug.

I could give the history of other cases, bearing testimony as to the correctness of my conclusion, but I think these amply suffice. Although, like all other human things, I have not found it to be infallible, yet I am fully persuaded that in the combination of these two drugs, we have the means of accomplishing much good. I have thus briefly given the result of my observations upon this matter. Living, as I do, in a malarious district, I have been a frequent witness of both the good and evil effects of quinine; and while I regard it as being one of the most useful agents in the Materia Medica, yet, in truth and justice, I am constrained to say that it, too, has its faults; and it is the province and duty of every physician to endeavor to render the known and reliable therapeutical agents as nearly perfect in their action as possible. I hope that the attention of the profession will be directed toward the study of the corrective influence exerted by these two agents upon one another, believing, as I do, that by that means much good may be accomplished.

The Causes, Pathology and Treatment of Epidemic Cerebro-Spinal Meningitis, or Spotted Fever.

By Robert F. Smith, M. D.

Having seen a good many cases of this disease at the hospitals and College clinics in New York, during the late epidemic, I offer to the profession the results of my observations thereon, together with the views of some of the leading medical men on the subject.

In regard to the etiology of the disease, it cannot be denied that the profession is still somewhat in doubt, though many

physicians are disposed to attribute it to malaria, and treat it accordingly. This origin, however, has not been clearly proven, and it is, I think, exceedingly doubtful. Some French writers, I believe, look upon it as a peculiar form of typhus, and it must be admitted it does present some symptoms common to typhus. The disease is considered by the leading men of the day to be a specific blood poison of miasmatic origin. In our reading we must carefully distinguish between the words "miasma" and "malaria," for notwithstanding that the derivation of the two words gives them the same definition, they are not generally used as synonyms by writers, the one being used to signify a bad air tending to produce peculiar forms of disease, such as intermittent and remittent fevers, and the other being applied to bad air in general, without reference to the nature of the disease it tends to produce. Though the source of the poison producing cerebro-spinal meningitis is by no means clearly settled, I think it most probable that the emanations arising from decomposing organic matter in filthy localities, cesspools, sewers, etc., exert a decided influence in inducing the disease. Let us for a moment consider the claims of these different theories of causation.

1st.—With reference to the malarial.

It is admitted that spotted fever, both in our country and in Europe, has prevailed to a far greater extent in winter and early spring than in summer and fall; therefore, if we accept the opinion that a temperature of at least 60° F. is necessary for the production of malaria, the question need be no further discussed. The idea of the influence of malaria exerted the previous fall might be deemed worthy of discussion if we did not find the disease prevailing to as great an extent in non-malarious districts as in those where ague is frequent, attacking persons who have lived long in malarious countries without being affected, and occurring during winters that have not been preceded by a marked prevalence of malaria. Dr. Radcliffe says, "there is no sufficient ground for believing the malady is of malarious origin." He states that certain cases distinguished by intermissions and remissions have taken place in a district free from malaria, and after some remarks relative to its prevailing in winter, when malaria is frozen up, says: "the infallible

test of malarious disease, quinine, by its inutility in cases of this epidemic which assumed an intermittent and remittent character, showed the non-malarious nature of the affection." Again, the fact that it is most frequent among children from one to five years old, who are comparatively exempt from malarial fevers, while older persons are least liable to it, is another argument opposed to malaria as a cause. Other facts to prove its non-malarious origin could be cited, but it seems that these are sufficient.

2d.—With reference to its being a form of typhus, a view which seems to have originated and remained with the French, Niemeyer says, "the idea has been entirely disproved during the late epidemic in Germany;" and Radcliffe says, "differing in all essential particulars, doubt can only arise when the two diseases prevail together; the difference in duration, course of temperature, form of cerebral affection, anatomical lesions, and rate of mortality, may all be observed as proofs that the disease is not of the nature of typhus."

3d.—Regarding the influence of deleterious gases arising from cesspools, sewers, etc.:

That the emanations from such places exert some influence either in exciting or determining the character of this disease, will be readily inferred if we look into the residences of those mostly affected. Without detailing the condition of those brought to the clinics, I will give the report of the city Sanitary Inspector to the Board of Health of New York, showing the conditions existing in a tenement where a number of children had died in rapid succession of cerebro-spinal meningitis, the longest period of illness in any case being seventeen hours. After detailing the particulars of the sickness and death of these children, the report continues:

"That there was a blood poison which had produced these results there could be no doubt; that there should be found a direct cause there seemed no question. It was diligently searched for and found. Upon a careful examination of the system of drainage belonging to these premises the following conditions were discovered:—This house, No. 445, and the adjoining house, No. 443, were found to have a common privy vault and one sewer connection therefrom to the sewer in the street, all the house drainage from kitchen sinks of both houses connecting with it. The drain was of earthenware pipe, and entered the cellar of the rear wall of the house No. 443, closely adjoining the partition between it and 445. This pipe had an elbow at the point where it entered the cellar, extending about two feet above the cellar bottom. The

lower opening of the elbow was loosely fitted into the shoulders of the next length of pipe, which passed downward and underneath the ground of the cellar bottom, thence to the sewers in the Eleventh Avenue. At this loose joint of the elbow there was no cement to prevent the escape of sewer gases, which passed outward and upward through the lath and plaster partition, base board and loose flooring of the rooms above the cellar.

"It was on this floor, level with the street and yard adjoining, that Mr. Brown's family, consisting of himself, wife and six children dwelt. This floor was divided into four rooms, as follows:—The front room was used as a tin-store, a rear room used for all the ordinary family purposes, being kitchen and living room, with two small bed-rooms intervening, one having doors from front and rear rooms, the other having an entrance from the store in front. In the rear room in one corner there is a closet without lining, simply shelves. Upon questioning the inmates they described a most offensive odor as issuing from this closet, frequently so bad as to produce nausea, and as the sick girl of thirteen years said, when she heard the inquiries about this stench, 'Oh, sir, it's awful; smells like dead dogs and rats; it has often made me sick.'

"The investigation of the sewer pipe before mentioned disclosed the fact that this loose-jointed elbow was almost directly underneath this closet, being in the cellar adjoining, close to the partition wall. At the top of this wall was an opening under the floor and communicating with the open lath and plastered partition dividing the houses. Again, there was found an enclosed wood bin, boarded up to the floor above from the cellar bottom, in which this elbow was located, preventing in a great measure the escape of these sewer gases into the cellar, but causing them to pass almost directly upward, through the openings above, into the closet, through the flooring and base-boards. In the history of these cases it will be observed that each child was attacked at night, and with nearly identical symptoms—pain in the head, vomiting, sometimes a chill, great prostration and rapidly fatal. What can illustrate more positively cause and effect? With the rooms closed at night, ventilation entirely obstructed, inhalation of poisonous sewer gases, in constitutions vitiated by want of proper nourishment, (the family being very poor,) what other results could be anticipated—either a slow fever of a typhoid kind, or, as in these cases, with an active poison, sudden death? Immediate steps were taken by notifying the owner of the premises to remove these earthen sewer pipes and substituing an iron pipe, with tightly leaded joints, and placing stench-traps under teach sink in the waste pipe."

Those who have noticed that sulphuretted hydrogen and gases of a similar nature, produce in animals some of the very same symptoms observed in cerebro-spinal meningitis, after reading the above report, if they accept the generally received opinion, that similar causes produce similar effects, will be led to think that possibly these emanations may be the source of the infection. We know that animals confined in these gases die very quickly, and that the rapidity of the effect is in proportion to the concentration of the poison, and the report of Dr. Morris shows that when confined in these gases, as the children were at night, with the doors closed, and the dilution of the poison with pure air, therefore, prevented, persons are

more liable to be attacked. The argument that the disease prevails to as great an extent in the country as in cities, cannot be received as a proof against the influence of foul gases, unless we know that in every instance the premises and surroundings are kept clean. Hammond thinks the gases arising from cess-pools and such piles of filth as we frequently see around the residences of some of our country friends, are more dangerous than those from sewers, and I think during our last epidemic the disease was more extensive in our cities, (where the sewer gas may be always escaping,) until after the thaws of spring, when it began to appear in the country.

The influence of cold and dampness seems not to have been particularly noticed, nor does the history of the epidemic point to any direct influence of the latter; but I find that many of the epidemics in this country have occurred during, or after, excessively cold winters, and this leads us to infer that intense cold in our latitude may exert some influence in producing the disease. May it not be that the debilitating influence of cold renders the system more susceptible to the specific poison? The influence of diseased grain deserves only a passing notice, as the effects it is said to produce are all producible by other means.

The *symptoms* of cerebro-spinal meningitis are very marked, and some of them almost pathognomonic; they correspond closely with the description given in the text books, and any one who has read carefully will have no difficulty in making a diagnosis; complications of course occur, and are characterized by symptoms peculiar to the class of diseases to which they belong.

In regard to the *pathology* of the disease, I think it settled that it is an inflammation of the pia mater of the brain and spinal cord, and except an occasional irregular spotted appearance of the skin, due to the petechial eruption, these alone are the seats of morbid change.

It is presumed that all medical men are acquainted with the anatomy of the brain and spinal cord, but to recall a few important points may not be amiss. The pia mater, the membrane mostly involved in the pathological changes, is the vascular covering of the brain and cord, closely investing their

entire surfaces, that of the brain dipping down between the convolutions and laminæ and being prolonged into the interior, forming the velum interpositum and choroid plexuses of the lateral and fourth ventricles. On the surface of the hemispheres where it covers the gray substance it is very vascular and sends nutrient vessels into the cerebral substance, but upon the crura cerebri and pons Varolii it presents a dense fibrous structure with only slight traces of vascularity. The pia mater of the cord covers its entire surface dipping down into the anterior fissure, and sending a very delicate process into the posterior fissure; this membrane is not so vascular as that of the brain, though very little difference is observed in the vicinity of the medulla oblongata. The pia mater of the brain and upper part of the cord derives its blood from the internal carotid and vertebral arteries, the dura mater being supplied by branches from the external carotid; the middle and lower portions of the membranes of the chord are supplied by the dorsal branches of the intercostal arteries; the veins returning the blood from the brain, except a few *venæ comites*, terminate in the lateral and inferior petrosal sinuses in the posterior fossa, and the blood is conveyed thence by the internal jugular vein. We thus have the anatomy of the parts concerned in the process of inflammation, and I here give the post-mortem appearances as observed in a marked case at the autopsy room of the Bellevue Hospital, the patient having died after about four days' illness. On opening the cranial cavity the longitudinal, lateral, inferior petrosal and straight sinuses were found filled with softly coagulated blood; there was but little change in the appearance of the dura mater and but little effusion in the cavity of the arachnoid, the veins and capillaries of the superior surface of the hemispheres and those dipping down into the sulci were intensely injected with softly coagulated blood of a dark venous character, presenting a marked contrast with the base of the brain, which presented the type of arterial engorgement. There was sero-purulent exudation all over the base of the brain, particularly extensive about the fossa sylvii, and other fissures, and in the fissures between the cerebrum and cerebellum, extending also down the cord, the nerves posterior to the pons Varolii being imbedded in it; about that

portion of the membrane covering the pons and crura cerebri, the exudation was not so extensive. On opening the brain the lateral, third and fourth ventricles were found to contain a large amount of sero-purulent exudation, particularly plentiful in the fourth ventricle, where large, lymph flocculi were found; the plexuses in these cavities were intensely injected and covered with sero-purulent exudation; the brain substance was so soft as scarcely to admit of being handled, particularly in the vicinity of the ventricles.

From these appearances we can readily infer what was the condition of things at the commencement of the inflammatory process; there being a determination of blood to the membranes of the brain and cord supplied by the internal carotid and vertebral arteries, and also to the brain substance, we have at first the symptoms of active cerebral hyperæmia, which are readily observed; there is increased excitability of the whole nervous system, the special senses of sight and hearing are particularly exalted, and we find great sensitiveness to light, flashes before the eyes, noises in the ears, etc. The olfactory nerve does not appear to be very much involved, nor does the third or motor oculi leave the brain at a point where there is very extensive inflammation; we must therefore account for the contraction of the pupil by the fact that the motor nerves have their deep origin in the anterior columns of the spinal cord, when irritation is applied on account of inflammation in the anterior fissure, or if the movements of the ciliary muscle are controlled by the sympathetic, from irritation of the cavernous plexus in the cavernous sinus. The herpetic eruption observed on the face is due to irritation of the carotid and cavernous plexuses, both of which send branches to the fifth, whence most of the cutaneous nerves of the face originate; the uncontrollable vomiting must be due to irritation either of the pneumogastric or the phrenic nerve, and the retention of urine and feces to contraction of the sphincters of bladder and rectum, from irritation of nerves supplying those parts. I have seen no suggestion to account for the general hyperæsthesia. If the vascular membrane dipped into the posterior fissure, in the vicinity of which the sensory roots are supposed to originate, we could easily account for it; but may it not be explained by

the fact that some of the sensory roots do arise from, or at least have been traced into, the anterior columns, as mentioned by Gray and taught by Professor Austin Flint, Jr.? The sixth nerve must be considerably irritated early in the disease, but the muscle it supplies has not sufficient force to overcome those supplied by the third nerve, though, becoming paralyzed later on, the *adducentes* act without antagonism and the convergent variety of squint follows. As the disease advances the products of inflammation are poured out, causing constant pressure on the nerves, and the intense congestion of the vessels of the brain diminishing the supply of nutrient blood to the brain and cord, the symptoms of active hyperæmia subside and we have those of anæmia following; on this account no nerve force is generated and we have coma and paralysis of many muscles of the body; the abducentes oculorum, sphincters of the bladder and anus, and others, afterwards those of organic life, respiration, etc.,; these paralyses are not at all difficult to explain, and Niemeyer says "it is wonderful they are not more frequent." From the above it is easy to perceive why there is so much congestion, so much effusion in the ventricles, and so much softening of the brain substance, for there being too much blood sent to the brain which is not returned, we have congestion and coagulation—the latter almost always post mortem—the brain is improperly nourished, and a condition of the parts ensues which must last until the circulation is restored, this can only take place slowly, and consequently the comatose condition into which the patient passes must last much longer than that of excitement; the patient must be supported during this stage in order to restore the blood to its normal condition and repair the injury done to the cerebral substance.

This brings us to consider the *treatment;* the objects to be attained thereby are perfectly clear, though frequently the disease progresses with such alarming rapidity that our remedies produce no effect. The first indication is to arrest the determination of blood to the membranes of the brain and cord, and to relieve the irritability of the nervous system caused thereby, and after this to support the patient until recovery. How must we stop the determination of blood—by general blood-letting? Certainly not; the patient will

need all the blood his system can provide in the latter stages of the disease. There is a great disposition to give opium; I firmly believe it is not the best remedy; it is clearly proved that the primary effect of opium is to increase the quantity of blood sent to the brain by stimulating the action of the heart, thus it tends to increase the trouble; its secondary effect, I admit, is to diminish it. I think, therefore, if opium be given it should be in combination with some more direct sedative—chloral, bromide of potassium, or some such remedy—or, if given alone, it should be administered hypodermically, as by this mode the secondary effect is more quickly obtained. Radcliffe, though he recommends it, says: "Its beneficial effect could not be obtained in those cases when it was used in the early stages of the attack." Bromide of potassium or of sodium, on the contrary, tends to lessen the determination of blood to the brain, and diminish the irritability of the nervous system, as failure of attempts to irritate the fauces of those under its influence clearly proves. Belladonna produces a sedative effect more quickly than opium and should be used in preference. Ergot may be given to cause contraction of the walls of the vessels, but if we consider that the intracranial vessels possess very little contractility, I think ergot may be ruled out. Cold applications to the head and spine are decidedly beneficial and should be freely used; warm baths to the extremities, frictions and other stimulants to the skin, are also very useful, and the blister to the nape of the neck should be our first application. Quinine should be given, not as an antiperiodic, but as a stimulant to the general system and as an antiseptic and antipyretic; the bowels should be kept open by the use of mild laxatives and enemata. The hygienic conditions must be as favorable as possible, the diet bland and nutritious from the beginning of the disease; in the acute stage soups, beef-tea, etc., and after the appetite returns more stimulating food of a digestible character may be freely given, and stimulants when the condition of the pulse so indicates.

Prof. Loomis' treatment is Sol. saturat. potassii bromidi; minims xl. every two or three hours, Quiniæ sulph; gr. iii. to v. every three hours; ice to the head and spine; blisters to the nape of the neck; bleeding when the constitution of the

patient will admit of it, and tonics during convalescence. I have seen that Dr. Davis, of Chicago, has had favorable results from the Calabar bean, and his success with the remedy makes it worthy our attention, but I did not hear it mentioned in New York.

The sequelae must be treated upon ordinary principles.

Two Cases of Post Partum Hemorrhage Controlled by Compression of the Abdominal Aorta.

By John G. Miller, M. D., Pleasant Hill, Mo.

MR. EDITOR: Accompanying this I send you the report of two cases of post partum hemorrhage, treated by copious injections, in both of which I had to resort to compression of the abdominal aorta. I, of course, do not claim any originality in the treatment, but, as I believe it is adopted by very few, I send these cases merely to draw attention thereto, and to encourage others to its use, feeling assured that some lives might be saved in this way which otherwise would be lost. J. G. M.

CASE I.—November 11th, 1870, at 6 p. m., I was called three miles into the country to attend Mrs. S., a small, delicate woman, aged nineteen, in labor with her first child at full term. About seven I arrived in presence of the patient; learned that she had been having slight labor pains for several hours, which, at the time of my arrival, had become moderately strong and frequent. I did not think it necessary to interfere until about nine, two hours after my arrival, when I made the usual examination and found the bag of waters protruding, the mouth of the womb widely dilated, the vertex presenting, the pains regular and forcible. I immediately ruptured the membranes, quite a quantity of liquor amnii escaped, the contractions abated for a short time, but soon returned with force sufficient to complete the labor in less than one hour from the rupturing of the membranes. The child was alive—a girl—and weighed nine pounds. The placenta came away in a few minutes and the womb contracted nicely. Keeping my hand over the womb I found that it soon relaxed, then again contracted, again relaxed, and again contracted, and so on, becoming more lax at every

relaxation, and less firm and larger at every contraction as compared with the previous contraction. I administered ergot and endeavored by friction and grasping over the womb to induce it to contract sufficiently to expel the clots that had formed and were still accumulating in it. These means had no effect, and the patient soon fainted from internal hemorrhage, little or none having escaped externally. I now immediately introduced my hand into the uterus and removed the clots, elevated the hips, applied cold water to the abdomen, continued the ergot, friction and grasping over the womb, and sent to town for brandy, expecting that the means being employed would soon produce the desired effect, namely, the permanent contraction of the womb. But I was mistaken, it remained perfectly flaccid; the remedies that heretofore had always served my purpose, now utterly, I might say ignominiously, failed. My patient became pulseless at the wrist, and seemed to be *in articulo mortis*, the blood still flowing. I now placed my thumb on the abdominal aorta, and by firm pressure thereon, soon completely controlled the bleeding. By this time the brandy had arrived and was as freely administered as the case would admit of; this rallied the patient some, but the womb still obstinately refused to contract. I now sent a messenger to bring to my assistance my former partner, Dr. S. L. Kennedy, of Pleasant Hill, requesting him to bring with him a Davidson's syringe and some muriated tincture of iron, and until he came—which was nearly an hour from the time the messenger started—I stood by the side of the bed with one hand in the uterus, the other pressing over it, with my thumb on the aorta, the least relaxation of the pressure of the thumb permitting a flow of blood.

On the arrival of Dr. K. I willingly relinquished to him the control of the artery and pressure over the womb, while I introduced the nozzle of the syringe well up into the uterus, at the same time retaining my hand in it. I then threw up into the womb several quarts of cold water, retaining it or permitting it to escape by the side of my arm in the vagina, at pleasure. After washing out the organ well with cold water we mixed with the water tincture of Iron in the proportion of a drachm or two to a pint of water, which we continued to inject into

the womb. Continuing this for some time we had the satisfaction of feeling contractions gradually come on, and in an hour the contraction was sufficient and permanent, and I felt very much relieved as well as satisfied. In about forty-eight hours the patient's pulse could be readily felt at the wrist; and she made a good recovery.

CASE 2.—May 5th, 1872, I received a telegram to go to Holden to attend Mrs. H., a stout, robust woman, aged twenty-two, in her first confinement. On the evening of the 5th after a somewhat protracted, though not a very severe labor, she was delivered of a fine healthy girl weighing nine pounds. The patient was but little exhausted and in good spirits. The placenta did not readily come away; I used friction and grasping over the womb and slight traction on the cord, yet it still remained. As there was some hemorrhage and the womb contracting tolerably well, I introduced my hand into the vagina so as to get hold of a portion of the placenta. Making traction on this and the cord, the placenta came away but in such a manner as to indicate that there had been an abnormal adhesion, a very small portion of the placenta remained in the womb. With the after-birth came a gush of blood. The womb immediately contracting, the bleeding ceased. Contraction lasted but a short time when relaxation took place, then again a feeble effort at contraction and at the same time a fearful gush of blood. Immediately the patient's face became pallid, and syncope was strongly threatened. As soon as possible I introduced my hand into the womb, removed clots and a small portion of adherent placenta, raised the patient's hips, applied cold water, continued grasping and friction over the womb, and yet the bleeding continued to be frightful, and the organ made no further effort to contract. I immediately introduced the nozzle of a Davidson's syringe by the side of my hand and arm, which were still in the vagina and womb. I now compressed the descending aorta with the thumb of my disengaged hand and at the same time had ergot administered freely by the mouth, and cold water injected into the womb, then tincture of iron and water as in case No. 1.

In less than an hour I had the satisfaction of feeling that the womb was well and permanently contracted and the patient's

life saved, which I feel almost certain would not have been the case had I relied on the usual treatment.

Treatment of the Diarrhoea of Infancy and Childhood.

By Prof. W. C. Evans, M. D.

It is not my purpose at this time to write an exhaustive article upon the nature of this disease, but simply to drop a few seasonable suggestions of a practical nature, to the young physician, regarding the treatment of a formidable malady. I shall do this as briefly and concisely as I possibly can.

The first points to be insisted upon by the physician in the treatment of this disease are diet, cleanliness, and pure air. These I regard as of greater importance even than medication, especially inasmuch as probably nine-tenths of all the cases we are called upon to treat have their origin in some error of diet, want of cleanliness, and imperfect ventilation.

Of course for the infant under twelve to fifteen months of age, the best is the natural article of diet, i. e., the milk from the mother's breast. But, sometimes the little sufferer is deprived of its natural food, by the death of its mother, or the secretion of milk may be insufficient to meet the demands of the infant, or, again, the milk may, through the pregnancy of the mother, or from some other cause be, by chemical changes, rendered totally unfit for the infant's use. In either of these events, a substitute of some kind becomes a necessity. The best of these is a wet-nurse, if a healthy, sober one can be procured. This is often impossible, especially in the country, or amongst those who cannot afford the expense. In these cases cow's milk is most commonly used. This should be properly diluted according to the age of the patient, and great care should be taken that it is not in the least acid. Unfortunately a large proportion of the milk purchased from dairymen in this section of the country, gives an acid reaction at the time it is delivered by them. Experiments have inclined me to the opinion that, from some cause, possibly some peculiarity of the hay, grasses and weeds upon which they subsist, the greater part of the milk of cows, in this vicinity, gives an acid reaction at the time it is milked. The addition of a little lime-water to the milk, will almost completely overcome this difficulty.

The very best substitute, however, for the mother's milk is, I am convinced, Liebig's food, the formula for the preparation of which can be found at page 45 of Vogel, or page 602 of Smith on the Diseases of Children. After the period of weaning, (at about twelve to fifteen months,) the infant or child will digest any of the easily digested farinaceous articles of food, such as rice, wheat flour, barley flour and arrowroot. These should then constitute the chief articles of diet. Beef tea, on account of its laxative properties, does not seem to me to be adapted to the requirement of such cases. In fact, I am certain I have known its use aggravate the complaint. The "meat pulp," or raw beef, is very well adapted to the peculiar condition of the digestive apparatus, in this disease, especially in children over eighteen to twenty months old. Eggs, done rare, (immersed in boiling water for two minutes,) I have usually found to be readily digested.

No matter what article or articles of diet may be selected, one thing should always be borne in mind, that it or they should be given *quite sparingly* during the existence of this condition of things, which is always one of indigestion. A little gum-water or barley water is, frequently, all I give to infants suffering from diarrhœa, until after two or three days, by which time the digestive apparatus will, usually, be found to have recovered somewhat of its tone, at which time "Liebig's soup," or some of the other articles of diet spoken of, may be introduced.

Cleanliness should be enforced as a positive necessity. The clothing should be changed frequently, and the person of the child should be kept as clean as possible; but, inasmuch as the warm bath (temperature 98° to 100° F.) twice daily, constitutes an important part of the remedial treatment which I usually institute, the body of the child will by that means be kept reasonably clean.

Too much stress cannot be laid upon the importance of free ventilation of the apartments, and exposure of the patient to the open air, together with the smallest amount of clothing compatible with the comfort of the child during the hot weather. I was much impressed with a remark made to me a day or two since, by the venerable Prof. Jos. M. Wood, the eminent surgeon

of this city, to the effect that a large majority of all the cases of cholera infantum (and consequent inflammatory diarrhœa) were produced by keeping the child too warm, and too closely confined in hot and stifling apartments, particularly at night, smothering the little sufferers during dog-days in feather-beds and flannels. Much better to place them upon a quilt on the floor in the middle of the room, raise the windows, and allow the free air of heaven to blow over them, fanning away pestilence and disease, bringing roses to their cheeks, and health and elasticity to their little frames. Children suffering from diarrhœa during the summer months, should spend a large portion of their time in the open air, especially early in the morning and in the evening, keeping them out for hours together, the longer the better.

I think that a majority of the cases of diarrhœa occurring in infancy and childhood, could be controlled by a rigid observance of the measures already enumerated, viz: diet, cleanliness, pure air, and the warm baths. But it is not always that we have the hearty and persistent coöperation of the nurse and the family to the extent of enabling us to reap the full reward of the employment of these means. There are cases, however, requiring active and intelligent medication. Still, I cannot but think that in many of even such cases the zeal of the physician often out-runs his discretion.

The list of remedies which I have found to be productive of the most satisfactory results in the treatment of this disease, is not a long one, but I think I can claim for them a fair share of efficacy.

I have seldom deemed it necessary to administer purgatives, as some authors recommend, at the commencement of my treatment of these cases, and I am fearful they have done more injury than good. My great object has been to change "the faulty character of the secretions," if possible, and to this end I have found nothing better than a slight modification of Condie's justly celebrated powders, or Condie's cure-alls, as I have heard them denominated. The formula I use is as follows, viz:

Hydrarg. Chlorid. mit.,	gr. ij. ad. iv.
Ipecacuanhae,	gr. ij. ad. iv.

Magnesiæ Carb.,	℈j ad. ij.
Ext. Hyoscyami,	gr. ij ad. iv. M.

Ft. Chart. No. xij. One to be repeated every two to six hours, according to circumstances.

In the language of Condie, "under the use of this combination we have generally found the stools to become less frequent, more natural, and of greater consistence; the digestion to be improved, and the irritability of the intestines diminished."

Should there be great restlessness and wakefulness—unless contra-indicated by the presence of cerebral symptoms, I sometimes substitute Dover's powder: gr. iij. ad ix. for the ext. hyoscyamus.

Occasionally I find the patient unimproved after the use of the powders for a day or two. If the discharges continue to be acid, I give either a few grains of bicarbonate of soda in a little water, or the following formula from Smith, page 378:

℞ Ocul. Cancror. pulv., ʒj.
Acaciæ pulv., ʒij.
Aq. fontis,
Aq. Cinnamomi, a.a. ℥iss. M.

Dose. A teaspoonful every four to six hours.

I have had much more satisfactory results with the above combination than I have had with the Chalk Mixture of the U. S. Ph., notwithstanding the fact that the ocul. cancror, or "crab's eyes," and the prepared chalk are almost identical in their composition.

Astringents are, of course, indicated where there does not exist evidence of any considerable amount of inflammation, and where the discharges continue to be frequent and watery, notwithstanding the use of the remedies already alluded to. Of these I prefer the vegetable to the mineral ones; my choice inclining to catechu and geranium maculatum. My experience in the use of the acetate of lead with children has not been satisfactory.

Sometimes, in recent cases, accompanied with fever, and where the evacuations are scanty, and consist principally of

mucus, or mucus and blood, the following formula of Dr. West's will be found to be quite serviceable:

℞ Tinct. Opii gtt. ix. ad xij.
Pulv. Gum Acaciæ,
Sacch. alb., a.a. ʒj.
Ol. Ricini, ʒj., ad ʒij.
Aq. Cinnamom., ℥iss. M.

Dose. A teaspoonful every three to six hours.

If the fever appears to be of a malarial or periodic character, I have been in the habit of adding to the above, quiniæ sulph., gr. ss. ad ij. to the dose.

In nearly all of the cases where we find the stools to be scanty, and mixed with mucus and blood, there are more or less tormina and tenesmus present. In order to relieve this, it is my custom to administer, after each motion of the bowels, an enema of one-fourth to one-half an ounce of thin starch, to which is added from one to three drops of laudanum, according to the age of the child.

In cases accompanied by a tympanitic condition of the bowels, the following will be found to be quite serviceable:

℞ Mucil. g. acaciæ, ℥iij.
Sacch. alb., ʒiij.
Spir. terebinth., ʒij.
Magnesiæ, calc., gr. xij.
Tinct. Opii Camph., ʒij.

Dose. A teaspoonful every three or four hours.

Should there be much tenderness of the bowels, warm fomentations are, I think, to be much preferred to leeches. Should all the means which I have advised fail, or if the case shall have advanced into an obstinate and chronic form of the disease, there is nothing else upon which I would so confidently rely as the nitrate of silver. I have seen many cases in which, after having tried almost every other remedy without effect, it seemed to exercise an influence almost magical in its results. It may be used as follows, viz.:

℞ Argenti Nitrat. Crystall., gr. ¼ ad ss.
Aquæ destil., ℥ij.
Gum Acaciæ, ℈ij.
Sacch. alb., ʒij. M.

Dose. A teaspoonful every two hours.

Also:

℞ Argenti Nitrat. Crystall., gr. ¼.
Mucil. Acaciæ, ℥ss.
Tinct. Opii., gtt. i. ad iij.

M. To be used as an enema after each motion of the bowels.

The physician is often annoyed in these cases by the presence of obstinate and persistent vomiting. I know of nothing that will, with greater certainty, quiet the irritable stomach than the following:

℞ Potassæ bicarbonat., gr. xxv.
Acidi Citrici, gr. xv.
Aq. Amygdal. Amarae, ℥j.
Aquæ, ℥ij. M.

Dose. One-half a teaspoonful as occasion requires.

In all cases where there is a considerable amount of prostration, I am in the habit of giving a few drops of good brandy or whiskey, frequently repeated.

During convalescence, in order to "tone up" the stomach and bowels, and restore digestion, I use the following:

℞ Pepsin (Boudault's),
Bismuthi Subnit. a.a. gr. xxiv.
Quiniæ Sulph., gr. iij. M.
Ft. Ch., No. xij.

A powder to be given three or four times a day.

Original Abstracts.

A Synopsis of the Views of Various Authors on the Subject of Headache.

Prepared for the Kansas City Medical Journal.

Dr. COPLAND, in his Dictionary of Practical Medicine, enumerates the following forms of headache:

1st.—The nervous; this is a neurosis, but not a neuralgia—from which it must be carefully distinguished—it occurs in the nervous temperament, and is induced by those agents which act strongly on such persons—such as atmospheric changes, especially exposure to cold winds, strong mental emotions, the excessive use of tobacco, impure air, odors of flowers, and exhaustion generally. In its treatment he advises quinine, camphor, henbane, valerian, aloes, morphia, iron, nitrate of silver, etc.

This form may also be produced by anæmia. It may therefore depend either on exhaustion of nerve force, or on deficiency of regenerative material.

2d.—The congestive headache arising from passive hyperæmia.

3d.—The plethoric headache arising from active hyperæmia.

These forms are induced by circumstances that modify the circulation through the brain, either by preventing the return of blood from it, or by sending too much blood to it, and therefore they may be considered as merely symptoms of such cerebral disturbances, viz: active and passive cerebral hyperæmia, and their treatment will be that of the corresponding state.

4th and 5th.—Headache arising from organic changes in *a.*—the cerebrum, *b.*—the bones and pericranium—these forms include syphilitic changes in the brain and its envelopes, exostoses, and tumors of all kinds, and are therefore to be considered only as symptomatic of the original diseases.

6th.—The rheumatic and arthritic forms, which are only modes of expression of their disorders.

7th.—The same may be said of the periodic form, which is only a variety of ague.

8th.—The hypochondriacal form is, as its name implies, a symptom of that condition, and is closely allied to that form met with in insanity.

9th.—The sympathetic headache, from disorder of the uterine and urinary organs, includes the hysterical clavus; this last is of considerable importance, and, of course, its treatment will be that of the hysterial condition and its causes.

10th.—The dyspeptic and bilious, commonly known as sick headache: here Dr. C. makes a remark which should be borne in mind, viz: that affection of the brain often occasions both the headache and the gastric disturbances; not only that cerebral disease may occasion vomiting, but that some forms of dyspepsia itself may be actually caused by disordered innervation arising from cerebral disorder; in these cases treatment will have to be directed to the brain, to produce a radical cure; that directed to the stomach being palliative only.

11th.—Neuralgic headache, hemicrania or migraine, is a neurosis following the course of distribution of nerve branches, similar to any other neuralgia.

This classification is valuable, and is that substantially adopted by many of the best writers.

The next author we shall refer to is M. VALLEIX, in his "Guide du Médecin Practicien," edited by MM. Racle and Lorain; he is known also by his "Traité des Neuralgies."

Nervous headache is described as a form which is different from migraine, neuralgia, rheumatic and congestive headache, and is not dependent on organic lesion—no detailed account of it or of its treatment is given, but nervine tonics and anodynes are advised.

Hemicrania or migraine, according to this author, is a neurosis, but not a neuralgia, nor is it dependent on dyspeptic and bilious derangements, although these generally accompany it. According to his description, it is the same as "sick headache" of English authors. The various visual disturbances noted by other writers are mentioned, and will be referred to particularly hereafter. M. Valleix calls attention to the palpitation of the heart which so often accompanies this complaint, and has frequently been mistaken for disease of that organ.

He also draws attention to the difference between "spontaneous pain," and "pain arising from pressure;" when this last is present, the "points douloureux" of trifacial and cervico-occipital neuralgia are often found. M. Valleix also states that the gastric disturbances may be the result of the cranial neurosis, instead of its cause. The attacks of migraine

are of comparatively short duration, involve no danger to life, and are irregularly periodic in their recurrence.

The disease itself is a hereditary neurosis; and it may be complicated with hysteria or other morbid conditions. It is most frequent in women, and may be induced by any cause acting strongly on the nervous system. The following prescription of Schneider is recommended to dissipate an attack:

℞ Ol. Valerian, p. 1.25.
Ether Acetic, p. 25.00. M.

Take ten to fifteen drops every hour.

Also the external use of solution of cyanide of potassium.

ROMBERG in his "Manual of Nervous Diseases" describes hemicrania as a "cerebral neuralgia," having a strong tendency to chronicity, but ceasing spontaneously with advanced age. He recommends the menyanthes trifoliatum with valerian if it is accompanied by atonic dyspepsia, also quinine, Fowler's solution and nitrate of silver. This author also treats at some length of cephalalgia as a symptom of various organic diseases of the brain, and he reports one case similar to one reported by Guthrie in his Commentaries on Surgery, in which a person had received a severe blow on the head which was followed by a persistent headache; on examination a depression in the skull was found. In Romberg's case an issue was opened by a crucial incision and was kept running for a long time. In Guthrie's case trephining was resorted to. In both cases a cure was effected.

DR. HANDFIELD JONES, in his "Clinical Observations on Functional Nervous Diseases," alludes to the following forms of headache:

1st.—Headache accompanied with prostration of nervous power, resembling the neuralgia of debility.

2d.—Hyperæsthetic headache, with excitement and increased sensibility to impressions.

3d.—Headache, the result of active hyperæmia.

4th.—Sympathetic headache, from disorder either of the stomach or some other organ.

5th.—Neuralgic headache or hemicrania.

6th.—Rheumatic and gouty headache.

He excludes from his work headache depending on organic changes.

In the cases related the marked symptoms were, 1st—neuralgia; 2nd—neuralgia and hyperæsthesia, both long residents in India; 3d and 4th—a condition resembling "anæsthesia dolorosa" in a nerve; 5th—debility and neuralgia, inducing gastric disturbance; 6th—cerebral exhaustion with hyperæsthesia and excitement; 7th—cerebral hyperæsthesia complicating rheumatism, which was the primary disorder; 8th and 9th

—cerebral hyperæsthesia, excitement and debility; 10th—gastric disorder producing cerebral paresis and cephalalgia.

Unfortunately many of the cases related in this work can by no means be considered as illustrative examples of the heading under which they are found. There is such a vagueness about them and a lack of sufficient grounds on which to base any diagnosis.

We now come to an exceedingly valuable contribution to this subject, that of DR. HASSE, in Virchow's "Pathologie und Therapie." He describes cephalalgia and hemicrania separately, and excludes from the former all those cases which arise from irritation of those sensory nerves distributed on the outside of the skull; these consist of neuralgias, affections of the tendon of the occipito-frontalis muscle and the intermuscular tissue, of the mucous membranes of the ear, nose, frontal and sphenoidal sinuses, and in traumatic, syphilitic or cancerous affections of the bones. In headache the pain is generally intracranial, but can only in few instances be positively located —our means of doing so not being reliable.

The kind and degree of pain have nothing characteristic by which any conclusion may be reached concerning the nature and location of the disease, but the combination of this symptom with other collateral symptoms must be carefully studied. There may be derangements of psychical activity, as delirium or unconsciousness—the first occurs especially in febrile diseases, and may be primary or secondary; the second is met with occasionally in the form of stupor, which, if intense and lasting, coming on after severe headache, is a strong indication of an affection of the brain. If memory is affected, lesion of the brain is to be apprehended; but it must be carefully ascertained whether loss of intellectual activity is the mere result of the severity of the pain, or whether it is a primary derangement.

Abnormal manifestations by the sensory nerves accompanying headache, when not produced by peripheral causes, point to some disorder in the central organ, but the indication is not so certain when their action is increased as when it is decreased. Noises in the ears, flashes of light, pains in different parts are much less significant than peripheric anæsthesia, formications, amaurosis, etc., even when these last are but transitory. The cases in which, besides a loss of the sense of touch there is also pain in the same parts, are more indicative of central disease, and still more those in which the sensory disturbances are either unilateral or constant in one spot, although this may be of only limited extent.

The same may be said of motor disturbances. We often find pain in the head accompanied with general convulsions;

and although the whole nervous system is in a state of great irritation, yet the cause of this irritation is by no means necessarily to be looked for in the brain; but when convulsive movements affect chiefly the parts supplied by the cerebral nerves, or only one-half of the body, the indication becomes stronger that the brain is affected. Spasms or contractions of isolated muscles or groups of muscles, with simultaneous headache, point more certainly to brain affection than do extreme convulsions, which last may occur in fevers, hysteria, anæmia, etc. On the contrary motor paralyses, when accompanying headache, point more certainly to local brain affection, especially when they are unilateral; the same is the case also when they are limited, or even transitory, as in ptosis, fixed pupils, impediment to the speech, etc.

Pain in the head with giddiness occurs in anæmia and the like, also in stagnation of the blood current, congestion, and other disorders of the cranial cavity.

When headache is accompanied by derangement of the respiration, it most generally depends on this cause and may arise from obstruction to the return of blood through the jugular veins. The same is the case with coincident disease of the heart. Should this last not be present, unexpected changes in the pulse generally indicate disorder of the brain or its membranes, of which a very weak, small, and especially an unusually slow pulse either following or alternating with the opposite, is, when coincident with severe headache, a very important symptom.

The relations of headache to disturbances of the digestive organs are particularly important, partly from their so frequently occurring together, and partly from vomiting being such a frequent symptom in hemicrania, and in organic cerebral disease.

The causes of cephalalgia are extremely various. It may be produced by psychical exertions, or emotion. It may radiate from painful conditions in the periphery. Certain substances taken into the body may occasion it, as alcohols, gases, narcotics, and some tonics. Circulatory derangements, as changes in the admixture of the blood, or in its local distribution may produce it; and so also may the chlorotic condition.

Contagions and miasmata are powerful influences in its production, as seen in acute exanthems, typhus, ague, catarrh, etc. It generally accompanies febrile conditions, especially in those who frequently suffer from anæmia and congestion of the head. Finally, nearly all those pathological states which affect the brain, its membranes, or bony encasement, are accompanied with more or less headache, which may be sometimes constant, at others intermittent in its character.

He then says, if a physician is called to a case in which the connection of the headache with some especial morbid condition is not easy to establish, he should first of all carefully examine the outer surface of the head, the condition of the soft tissues, of the bones, and of the neighboring parts; he should inquire into the extension of the pain along the anatomical course of various nerves, and into any disturbance in the various functions of the brain—into the existing conditions of blood distribution—into the possibility of any toxæmia, whether from internal or external sources, and into the existence of any constitutional or general disturbance, before he forms any judgment in the case, or commences its therapeutic treatment.

Having thus considered cephalalgia, he includes "hemicrania, or migraine," among the neuralgias; he adduces Du Bois Reymond's opinion that it is increased by tonic spasm of the cervical muscles or by a continuous irritated condition of the cervical sympathetic, while Möllendorf believes it to be caused by a paralysis of the sympathetic and a dilatation of the arterioles.

He describes the course of the disorder in its usual form, and speaking of its prognosis, says: "It is so far favorable, that it is never fatal; but it is so far unfavorable, that no treatment can be depended upon for its cure. A lessening of the frequency of the severity of the attacks is the most that can be hoped for."

Under the head "Treatment," he insists that it is the general condition of the system that should particularly receive attention. Chlorosis, anæmia, nervous irritability, dyspeptic derangements, malarial poisoning, dysmenorrhœa, or any other disordered condition, should be, as far as possible, removed. As remedies against neuralgia, he mentions exts. pulsatilla, valerian, menyanthes trifoliatum, guarana or paullinia, quinine, digitalis, arsenic, and nitrate of silver.

Eulenburg in his treatise on "Functional Nervous Diseases," treats only of hemicrania and includes it among the neuralgias. Its resemblance to these is shown by the spontaneous and paroxysmal appearance of its attacks, while it differs from them in that the pain neither plainly follows the course of the large nerve trunks and their branches, nor is it evidently perceived in the peripheric termination of definite nerve branches; on the contrary, it is more generally perceived in a rather undefined manner on the inner side of the skull.

Yet we can no more exclude hemicrania from the neuralgias than we can any other of the visceral neuralgias. The pain in hemicrania is not so strictly confined to one half of the skull but that it occasionally affects the other side also. The left

side is more frequently affected than the right. The pain is not mobile, but is fixed and is not equally spread over one half of the head, but is rather confined to one or other region, such as the forehead, temples, etc. The character given to the pain by patients differs from that ordinarily given to neuralgia, and is more or less similar to that of clavus hystericus, or of cephalalgia syphilitica.

The attacks are often preceded by prodromes, such as disturbances of vision, or of hearing, yawning, stretching, nausea, chilliness, general discomfort and relaxation.

The commencement of the pain is very frequently accompanied by nausea and attempts at vomiting, and by disturbance of the special senses, the bad, foul taste being due to paralysis of gustatory nerves rather than to gastric disorder. After a while the patient falls asleep, from which, if sufficiently prolonged, he generally awakes free from pain; the termination of the attack is also often preceded by an increased secretion of saliva, by vomiting, and by an increased secretion of urine.

The duration of the attack is from some hours to half a day, sometimes, however, extending to several days. Du Bois Reymond first observed on himself certain vaso motor or pupillary phenomena; the face on the painful side was pale and shrunken, the eye small and reddened, and its pupil dilated; the temporal artery felt like a hard cord. The pain was increased by all circumstances that increased the blood-pressure in the head, and was more severe synchronously with the pulse of the temporal artery, some of the spinous processes of the vertebræ, corresponding to the cilio-spinal region of the spinal cord appeared painful on pressure during and after the attacks.

In similar cases Eulenburg has often observed a contraction of the pupil towards the close of the attack.

Möllendorf in an ophthalmoscopic examination found the central vessels of the affected eye dilated, the vein appeared knotted, very tortuous and much darker in color than usual; the choroidal vessels were also dilated, giving the background of the eye a scarlet red color instead of its natural dark brown red; the episcleral vessels were also injected as far as the border of the cornea; but Möllendorf does not state in which stage of the attack the examination was made, and he has made no remarks on the condition of the pupil at that time. He also found the frequency of the pulse diminished during the attack, being as low as 56—48. The radial arteries were small and contracted, while in the carotid and temporal arteries a soft, broad wave was felt. The condition of the cerebral circulation varies according to the stage of the attack.

Valleix's painful points are wanting in pure hemicrania; if present, hemicrania is complicated with some form of facial neu-

ralgia; but there is frequently cutaneous hyperalgesia, which is occasionally very extensive. Compression of the carotid artery on the affected side will often relieve the pain temporarily; but it returns again as soon as the pressure is removed. Pressure on the opposite carotid generally increases the pain; in one case, however, Eulenburg found the opposite to be the case.

The course of the complaint is very chronic, the attacks are distant from one another about three or four weeks. In females they are often, but by no means always, synchronous with the menses. The attacks may be produced by bodily and psychical exertion, and by derangements of digestion. The intervals are free from pain and present no other symptoms. In this way the sickness may drag on for years, and as age comes on the attacks become less frequent, and finally cease altogether. In women the climacteric appears to exert a favorable influence.

Migraine is very common; women are more liable to it than men in the proportion of five to one. It is a neurosis, hereditary, may appear in children when the predisposition is very strong, but more frequently comes on about the age of puberty and a little after. The dyscrasias do not particularly predispose to it, nor does hysteria, although Schönlein has designated hemicrania as "hysteria cephalica;" the hysteric clavus presents, however, much similarity to hemicrania.

Hemicrania occurs in all stations and classes of society; it is a sickness of the poor laboring woman, as well as of the rich, blasé woman of the world. It attacks weakly, delicate men, as well as those that are robust, well nourished, and enjoying in abundance the pleasures of the table. Students suffer relatively often from migraine, owing most probably to the concentrated tension of the mental powers, and the thereby excessively prolonged, or unnaturally increased functional excitation of the brain. The seat of the pain is very obscure, some place it in the nerve filaments of the cerebral nerves, others locate it in the brain itself—at present the matter is still *sub judice*.

Eulenburg favors Du Bois Reymond's view that there is a tetanic condition of the muscular coat of the vessels of the affected side, consequently a corresponding condition of the sympathetic of that side, or of its spinal center and that the pain may be similar to the pain in cramp, colic, etc. He holds, however, that the nerves themselves may be thrown into a state of great excitability by the sudden change in the lumen of the vessels accompanying or surrounding them. The local disturbances of the circulation are to be considered as the essential and general cause, the tetanic condition of the muscles being more auxiliary.

In the treatment of migraine, that of the separate attacks and that of the interval are to be carefully distinguished.

During the attack, rest, quiet, the recumbent position and palliatives are to be recommended, among these last are cold and compression of the head; the use of sedatives internally or externally is not recommended; nor is the hypodermic injection of morphine followed by such good results as in other neuralgias. Large doses of quinine are recommended, and occasionally bromide of potassium has been found serviceable during the attack. Electricity has been found of but little service; during the intervals many remedies have been recommended, such as preparations of iron, quinine, caffein, secale cornutum, strong coffee, sulphate of nickel, arsenic, etc., bitter tonics and aromatics. In some cases a course of mineral waters has been found serviceable. In this stage electricity may be used with greater advantage.

Since some cases of hemicrania are attended by spasm, others by paralysis of the muscular coats of the cranial vessels, and yet others in which no such functional disturbance can be demonstrated, it is very evident that great care must be exercised in the use of electricity. When the constant current is used, the sympathetic may be galvanized, in the tetanic but not in the paralytic form; or the current may be sent directly through the head both transversely and longitudinally.

Faradization has been also strongly recommended by some authors, either by means of the primary stream, or by the "electrical hand," and sometimes these have produced very satisfactory results.

Dr. Anstie in his work on "Neuralgia, and the diseases that resemble it," considers hemicrania or migraine to be a neuralgia of the fifth cranial nerve. When occurring in children he considers it *prima facie* ground for suspicion of precocious sexual irritation; it is amongst those neuralgias which are immediately excited by anæmia or mal-nutrition. It is the most common form of trigeminal neuralgia, and generally makes its appearance during the period of bodily development; it is frequently induced by a premature straining of the mental powers; it may affect the nerves on both sides; if the pain is prolonged, nausea and vomiting are induced, but the vomiting is not ordinarily remedial, unless there should be a quantity of undigested food lying in the stomach, in which case it may directly relieve the nerve pain. When the patient awakes from sleep, the active pain is gone, but a soreness of the integuments often continues for some hours.

It often has prodromata—sighing, yawning, shuddering—the pain often extends to every twig of the ophthalmic nerve, there is great watering of the eye, drooping or jerking of the

eyelid, dimness or failure of the sight, and darts of agony shooting up to the vertex; the patient cannot bear light or motion, the feet are generally cold, and often towards the end of the attack there is a copious discharge of pale limpid urine.

Migraine differs from clavus from the greater extension of the pain, it being limited in clavus to one or two small definite points.

Attacks of migraine in early life are often exchanged for some other neuralgia—generally facial—or some neurosis in after years, as tic douloureux, epilepsy, etc.; they are very often of hereditary origin and a mark of the "nervous temperament," or as Maudsley terms it the "insane" temperament. In its treatment he advises one-fourth to one-half a grain of *good* extract of Cannabis indica, repeated in two hours if it has not produced sleep; especially in the young, for he says it is very important in this disease that the habit of long neuralgic paroxysms should not be set up, and if the first two or three attacks are promptly stopped by the induction of sound, non-narcotic sleep, we may get time so to modify the constitution by tonics and general regimen and diet as to eradicate the neuralgic disposition, or at least reduce it to a minimum; opium and belladonna are unsuited to this purpose, but in their stead he advises chloral, cannabis, muriate of ammonia in doses of twenty or thirty grains; and if these prove unsuccessful, tonic regimen and the use of galvanism.

His ideal medication is chloral in a dose of twenty grains, and a foot bath of very hot mustard and water, having the patient inhale the steam from this. He advises transverse galvanization of the brain from one mastoid process to the other, the sittings not to be longer than half a minute, and at first only three or four cells of Daniels' or Weiss' battery to be used; more than ten cells should never be employed. Great care is to be exercised in the training of children predisposed to any neurosis; they should have abundance of exercise in the open air, wholesome, plain food, and above all, only a limited time allotted to study.

Migraine must not be confounded with dyspeptic headache, nor *vice versa*. This last is generally the result of gastric catarrh, either subacute or chronic, the headache is generally frontal or occipital, and usually quite evenly bilateral; but it is never seated in one parietal region, distinguishing it from clavus. The tongue is generally "strawberry" in its appearance; there is generally nausea, but not vomiting unless a meal more undigestible than usual has been taken; there is great mental despondency, as is usual in dyspeptics, unwholesome complexion, general malaise, and aching and feebleness of the limbs; the attacks are not periodic, and the pain has no

tendency to go on intensifying for hours and culminate in vomiting, followed by sleep, after which the patient is free.

The diagnosis between the two is not really difficult, it only requires a fair amount of caution in observation. In migraine, those attacked are often persons of bright spirits and lively intelligence in the intervals, while the attacks themselves have a regular and characteristic sequence of events.

In the earlier numbers of the British Medical Journal for this year, are several articles on this subject of headache. In one by DR. WILKS, he distinguishes between dyspeptic headache and nervous headache, or that form which is essentially a neurosis. Any strong impression on, or disturbance of the nervous system will frequently induce this latter, and tonics, nervine stimulants, as tea, coffee, or ammonia, and bromide of potassium are to be taken and bi-sulphide of carbon or galvanism are to be applied locally.

This journal gives also some reports of medical practice in the hospitals with reference to this subject, but many of them are extremely unsatisfactory and tend rather to obscure than to elucidate the subject, dyspeptic headache and hemicrania being termed indiscriminately "sick headache."

DR. NUNNELEY advises in hemicrania or nervous sick headache, drachm doses of the aromatic spirits of ammonia with ten grain doses of the chloride of ammonium to be given as soon as the attack begins, and to be repeated every twenty minutes or half hour for two, three, or four doses, and then at longer intervals; or tincture of nux vomica in doses of two minims every quarter of an hour for two or three hours, afterwards at longer intervals. A few doses of one or other of these medicines may cut short a commencing sick headache. He also advises hydrate of chloral at bed time, and bathing the head with hot or cold water, according to the patient's wish. Dr. C. Allbutt advises bromide of potassium in sick headache (neuralgia), especially when in connection with uterine or ovarian disease; he considers hemicrania to be a neuralgia of the trigeminal nerves, and advises, in order to cut short an attack, twenty to sixty grains of nitrate of ammonia; as tonics he gives arsenic the first, and strychnine the second place; and he advises the daily or tri-weekly use of the continuous current.

Dr. S. W. D. Williams states that the use of tincture or extract of cannabis indica daily during the intervals has proved very successful.

DR. LATHAM, in a clinical lecture on "Nervous, or Sick Headache," reported in the same journal, gives an interesting account of the disturbances of vision immediately preceding the attack, such as partial loss of sight, or rather limitation of the field of vision, zigzag lines presenting a sort of "fortification

outline," and a glimmering, vibratory movement resembling the undulations of heated air, as described by Sir John Herschel and Dr. Hubert Airey; he also mentions the occurrence of the "fidgets" as among the prodromes; from these and other disturbances of special and other senses he shows that there is first, contraction of the vessels of the brain, and so a diminished supply of blood, produced by excited action of the sympathetic, and secondly, dilation of the vessels and headache, on the exhaustion of the sympathetic following this excitement.

Under some disturbances of the nervous system the brain loses its tone either from over excitement or from over work; it is then unable to inhibit or restrain the action of the sympathetic, and a slight cause suffices now to excite the action of this nerve; under its excitation the cerebral vessels contract, a diminished supply of blood is sent to the brain and the visual and other nervous disturbances are the result. When the patient adopts a position favoring the flow of blood to the head the symptoms are temporarily relieved, or at least remain stationary; but on the contrary position being assumed, as the upright, all the symptoms become aggravated. The nerve of the left side is more frequently affected, and consequently the visual disturbances are more frequent in the right eye, this one-sidedness of the affection being the ordinary condition in nervous disorders generally.

The various degrees of relaxation of the vascular system will account for the variances in the course of the symptoms, as 1, disturbance of vision without headache; 2, disturbance of vision followed by headache; 3, headache preceded by disordered sensation but not by disturbed vision. He divides the treatment into 1, that of the stage of disturbed sensation; 2, that of the stage of headache; 3, that during the intervals. In the first he advises stimulants—wine, brandy, or ammonia, and warmth to the feet; but this is to be used only during visual disturbance. If there be irritability or the "fidgets," half a drachm or a drachm of the ammoniated tincture of valerian should be taken, or the same quantity of spiritus ammoniæ fœtidus, alcoholic stimuli not being advisable in these cases, and the recumbent position should be maintained for some time. In the second stage a cup of coffee or of tea may be taken, and exercise in the open air if there be no gastric uneasiness; if there is vomiting, iced soda water, with or without two or three drops of hydrocyanic acid, or of spirit of chloroform may be administered; or bromide of potassium 5 to 15 grains with sal volatile 30 or 40 minims may be taken, and if there be nausea in effervescing draughts of citrate of potash. The use of purgatives is generally objectionable.

In the third stage, i. e. during the intervals, he advises steel, strychnine and cod liver oil. If there is gastric or enteric disturbance the simple vegetable bitters, as gentian, with henbane and some aromatic, and some blue mass with compound rhubarb pill may be first administered to correct such disorders; then he recommends the following, ℞ Ferri et ammon. citr. gr. v. potassii iodidi gr. ii. aquæ ʒj, with 15-20 minims of tincture of henbane, or 20-30 minims of aromatic spirits of ammonia according to circumstances; or if the stomach be irritable an effervescing draught of 20 grains of bicarbonate of potash, and a sufficient quantity of lemon juice or citric acid; as soon as the irritability of the stomach has passed away, he substitutes for the additions five minims of liquor strychniæ. The iron is indicated by the greater or less anæmia present; but the strychnine is an important remedial agent in the disorder.

The cod liver oil acts as a nutrient tonic on the cerebro spinal nervous system, enabling the energy of the brain to be preserved during prolonged mental exertion; it should be taken once a day, beginning with a teaspoonful immediately after breakfast. The bowels should be regulated by the socotrine aloes pill, five grains, or the aloes and iron pill; but purgation must be especially avoided.

Arsenic, quinine, caffeine are sometimes of service when anæmia is not a prominent symptom. Diet and exercise must be particularly attended to.

Dr. E. Liveing, (same journal,) would explain the phenomena by a "nerve storm" traversing more or less of the sensory tract from the optic thalami to the ganglion of the vagus, or else radiating in the same tract from a focus in the neighborhood of the quadrigeminal bodies. The analogy of epilepsy, which is supposed to have its point of departure in a tendency to explosive discharge in the motor tract of the medulla oblongata, lends support to this view.

In the British and Foreign Medico-Chirurgical Review for Jan., 1872, is an article on Anstie and Eulenburg, in which the reviewer makes a very important clinical remark on the treacherous tendency of morphia in some cases to keep up the neurosis it pretends to control; and he cites cases in which on discontinuance of the morphia the neuralgia also disappeared. He notices also the importance of other remedies during the regular use of hypodermic morphia.

As morphia is the common anodyne, these cautions should not be neglected.

Selections.

Physiology.

The Movements of the Uterus.

Abstract of an article read by DR. OSER before the *Gesellschaft der Aerzte* in Vienna, Dec. 15th, 1871. Translated for the Kansas City Medical Journal.

The experiments reported below were conducted by Drs. Oser and Schlesinger, Jr., in Prof. Stricker's Laboratory for Pathological Histology.

The doctrine of the peristaltic movements of the abdominal viscera has, until quite recently, been involved in obscurity. Not long since, Brown-Séquard demonstrated that the quality of the blood exerts an influence on the movements of the intestines. The observations of Basch and Mayer confirm the fact that the venous quality of the blood acts as a stimulus to intestinal peristaltic action.

The opinions of writers as to the cause of uterine movements vary greatly. They are thought by some to depend on the brain, by others on the spinal cord, on the sympathetic, on the ganglia of the womb itself, on the sacral plexus, etc.

For the purpose, if possible, of throwing light on this subject, Dr. Oser experimented on one hundred and twenty-three different animals, dogs, cats and squirrels. The method of procedure was first to perform tracheotomy, and then to put the animals under the influence of woorara, artificial respiration being kept up through the canula. The abdominal cavity was then opened, the genital organs exposed, and the various stimuli applied.

The first point observed was the effect of arresting the respiration. Ten seconds after respiration was stopped, the uterus was thrown into heavy, tetanic contractions, which, beginning at the tubes, spread over the horns to the body of the organ. The uterus became pale, cylindrical and narrowed, its horns became erected, forming an arch and overlapping one another. As soon as respiration was recommenced, these contractions ceased, and as circulation in the organ was reëstablished, it became relaxed and returned to its normal position.

When respiration was not interrupted, but in place thereof, compression of the abdominal aorta was practised, similar contractions ensued, but only at the end of one hundred seconds, or nearly two minutes. Compression of the aorta and arrest of respiration combined, gave precisely the same result as the latter alone.

The effect of anæmia was tested by bleeding from the carotid artery. The result was the same as in compression of the abdominal aorta.

It appeared, therefore, that disturbances of circulation and loss of blood exerted a less influence on the contractions of the uterus than the arrest of respiration.

When, however, the supply of blood to the nerve centres was cut off, the result was different. Compression of the arterial trunks going to supply the brain, produced contractions of the uterus in a very few seconds. In order to determine more definitely the origin of this impulse, the spinal cord was severed between axis and atlas, with the effect of materially diminishing, though not entirely arresting these phenomena. Oser does not pretend to say in what portion of the brain the centre for this reflex activity is to be located; it certainly cannot be below the point at which the cord was severed; probably it lies in the medulla oblongata, where physiologists unite in locating the centre of the vaso-motor system. Finally, the essayist admits that peripheral as well as central irritations may cause contractions of the uterus.

All these experiments go to prove that as non-oxygenated blood, (*dyspnoesches arterienblut,*) according to the observations of Rosenthal, Thiry, Kussmaul and Tenner, by its irritation of certain centres produces contraction of the muscles of repiration, the muscular coats of the vessels and the voluntary muscles of the whole body, so it also finds a centre in the brain the irritation of which causes the uterus to contract.

In addition to this cause, however, Oser claims that the "dyspnotic blood" causes contractions by irritation of certain irritable bodies in the substance of the uterus itself, which accounts for the contractions that take place on compression of the aorta or arrest of respiration after section of the cord in the neck.

Effects of the Circulation in the Lungs in Distending the Air-Vesicles.

In the Gulstonian Lectures delivered by Dr. Hensley, he advanced the hypothesis that one cause of the alteration of the air-vesicles from the state of collapse in the lungs of the fœtus to a state of distension in the lungs of the newly-born child, was that the blood, forcibly propelled by the heart through the

capillaries of the lungs, tended to straighten them out, and thus to open out the air-vesicles round which they are placed, and which, in the fœtal condition, are folded up like the petals of an unopened flower-bud. The effect of the circulation in doing this has actually been investigated by Liebermann (*Wien. Med. Zeit.*, No. 5, 1872), who constructed an apparatus to imitate the air-vesicles by placing one ox-bladder within another, and then sewing them together in such a manner as to leave a net-work of tubes which represented the pulmonary capillaries, and which terminated in two openings, in which tubes corresponding to the pulmonary artery and vein were placed. The tube corresponding to the pulmonary artery was connected with another bladder filled with oil which represented the heart; and the inner bladder was tied on to a glass tube which represented the trachea. The bladder which represented the air-vesicles was then placed so as to empty them of air; and, when in a collapsed condition, the one filled with oil was squeezed so as to force the oil into the network of tubular spaces left by the rows of stitches. After a squeeze or two, these schematic capillaries became full; and at the same time the collapsed walls of the bladders opened out, and air rushed in through the glass trachea to fill up the interior, with a distinct murmur. Liebermann thinks that this action of the capillaries counteracts the strongest expiratory efforts, and is the reason why the lungs contain air during the deepest expiration.—*British Med. Journal.*

The Corpora Striata.

Dr. McKendrick read a paper before the Medico-Chirurgical Society of Edinburgh on the corpora striata, with the results of experiments. After a few preliminary remarks regarding the vague character of our knowledge of the functions of the different portions of the encephalon, and having pointed out some of the difficulties in the way of attaining trustworthy results by experiment, Dr. McKendrick described the general anatomy and histological structure of the corpora striata, including their connections with the crura cerebri.

He found in these organs in pigeons, that the upper surface was essentially molecular. Deeper down, about half through the thickness of the bodies, there were numerous pyramidal nerve-cells, similar to those found in the convolutions of the cerebrum, while at the deepest part the cells were less numerous, and resembled the smaller multipolar nerve-cells of the spinal cord. The nerve-tubes increased in breadth as one proceeded from the surface to the base. He described the development of the corpora striata, pointing out their early

appearance in the embryo as thickening in a floor of prolongation or diverticulum from the anterior cerebral vesicle, the cavity remaining as the lateral ventricle. He discussed briefly the comparative anatomy of the organs, tracing them from the lower to the higher orders of vertebrata, showing their persistence from the amphioxus upwards. He alluded to the views held by several comparative anatomists, that the cerebral lobes of fishes might really be regarded as corpora striata alone. The brains of the reptile and of the bird were also described; and it was shown that in both, particularly in the latter, the great mass of the hemispheres really consisted of corpora striata, the cerebrum proper being represented by only a thin layer of grey matter over the ventricular cavity.

He then described the results of thirty (as representing a much larger number of birds) experiments on pigeons as follows: 1. After removal or injury of the cerebral hemispheres alone, or along with the corpora striata, there was a persistent diminution of animal heat to the extent in pigeons of 6° to 8° Fahr. 2. Removal of one of the cerebral hemispheres from a pigeon had no permanent effect. 3. Removal of the anterior half of both cerebral hemispheres, without injuring the corpora striata, was negative in results. 4. Removal of the posterior half of both cerebral hemispheres occasioned no marked effect, except that the birds took no food, and required to be stuffed. 5. Careful removal of the thin layer of grey matter representing the cerebral hemispheres in pigeons was followed by a diminution of intelligence, volition, and sensation. 6. Removal of the hemispheres along with the upper half of the corpora striata caused complete loss of intelligence, volition, and sensation. 7. Injury done to the deeper portions of the corpora striata was followed by severe convulsions, and afterwards by paralysis of both extremities, and was always soon fatal. 8. When one hemisphere together with the upper part of the corresponding corpus striatum was removed, there was loss of vision on the opposite side; but removal of the hemisphere alone was not followed by this effect. 9. Injuries inflicted on the corpora striata by passing a narrow double-edged knife through the side of the head were negative, unless the deeper parts of these bodies were involved. 10. Removal of the cerebral hemispheres alone without injury of the corpora striata was not followed by complete loss of hearing or sight, but if the upper part of the corpora striata were removed, these senses were abolished. 11. Injury to these parts of the brain was followed by fatty change in the muscles of the bird, if it survived a month or two after the operation. 12. The corpora striata have a twofold function; the lower or deeper part being concerned in motion, the upper part being probably the instru-

ment of crude sensations, sensations followed by no ideas or attendant images.

At the close of the paper, Dr. McKendrick stated that he did not think he could say positively from these experiments what were the functions of the corpora striata in mammalia and man, but it was probable they were the same. As he held that observations made immediately after the operation were almost useless, because untrustworthy, he thought better methods of research, by experiments on the higher animals, must be devised, methods not rapidly fatal, before we can hazard an opinion as to the exact functions of the different portions of the encephalon in man and mammalia. Preparations of the heads of the birds were shown.—*Ibid.*

Surgery.

On Gastric Juice and Solution of Pepsin as a Dressing to Sores.

By Dr. August Stohr. Translated from the Wien. Med. Wochen for the Kansas City Medical Journal.

The many attempts to destroy malignant growths by means of gastric juice taken from dogs, are sufficiently well known, and have been repeatedly referred to in this journal. The author, being Physician in Ordinary of the Syphilitic Department of the Würzburg Military Hospital, determined to study the results of the gastric juice on sores furnishing an inoculable secretion, and therefore selected chancres as the subjects of his experiments. The inoculable chancre is especially adapted to such researches, as it may be produced in any amount by inoculation, and at the same time collateral experiments of all kinds can be readily performed. Hitherto the gastric juice has been but little employed in the treatment of venereal sores. The statements of Carminati referred chiefly to inveterate syphilitic ulceration, while Lussana employed it on two cases of recent chancres, which were rapidly healed by it.

The author used at first the gastric juice of a dog, drawn off directly through a fistulous opening. The animal was kept fasting for some time, and the stomach was then irritated by small stones or pieces of bone, which plan afforded the purest juice. Afterwards the author used a solution of gastric juice prepared from a dog that had been killed, and finally an artificial gastric juice was prepared from the pepsin found in the stores.

The application was made by pencilling over the surface of the sore at short intervals, fifteen or twenty times in the day, or small pledgets of cotton-wool were saturated and laid on the

sore and covered with larger pledgets saturated with very dilute hydrochloric acid. It is absolutely necessary that the dressing be kept always moist, because, as physiology teaches us, the change of albuminoids into peptone, can only occur in the presence of a sufficient quantity of water. The constant change of the latter pledget moistened with the dilute acid renders the repeated change of the first pledget unnecessary, and thereby occasions a saving in the use of the gastric juice. In inoculation-chancres, on which the experiments can be most perfectly carried out, the gastric juice was dropped on the surface of the sore, by which means the small excoriated surface was always kept covered with a layer of the fluid.

The use of the gastric juice was begun as soon as the sores had attained the size of a sixpence. Its application was in nearly all cases entirely without pain, only one patient complained a short time after the first pencilling of a slight itching or burning pain on the borders of the sore. When sores on the corona glandis or the prepuce were dressed in this way, the pain was in some few cases more severe, and lasted from ten to sixteen minutes—only one complained of a severe pain, and in him an extensive sore in an inginual gland, was dressed with an artificial gastric juice, rather strongly acidulated with hydrochloric acid.

In three or four hours after the application, there adhered to the bottom of the sore a layer of a grayish white, semi-transparent substance, having a gelatinous appearance. In a few cases this could be removed like a membrane, it adhered tolerably firmly, and was only with difficulty washed off by a small stream of water. Under the microscope it exhibited cells from the corium, and other cell formations, similar to those found in fresh exudations, mixed through it in small quantities. If the application of gastric juice was continued, this gelatinous layer was more considerable, and at the edges of the sore there was a border of pure pus; after twenty-four to thirty-six hours the edges of the sore appeared somewhat smaller, and not so steep. If the application of gastric juice were now omitted and the sore left without dressing, the gelatinous layer gradually dried, contracted concentrically, and the cavity appeared to be covered with an arched, horny, grayish white crust, rather difficult of removal, and beneath which there was frequently a collection of thick, creamy pus. In many cases this crust was not removed, and it then remained adherent for five to eleven days. Cicatrization then commenced at its borders, and if it were then violently removed, which generally produced some hemorrhage, the sore was found to be considerably smaller, finely granulating, and a complete skinning over followed in a very short time, with a simple water

dressing. Generally, however, the author removed this layer frequently, and applied the gastric juice, until experiment showed that no more inoculable material was formed. The tendency of the sore to cicatrization was then particularly favorable, and this was completed between the fourth and seventh days.

In order to prove whether this favorable termination was not entirely or partially due to the hydrochloric acid used, the author treated similar chancres, of the same age, with water so acidulated, with the addition of a little chloride of sodium, but no such appearances as above were observed, and the time of their healing bore no comparison with that of the others, treated as above. The gastric juice produced the same results on ordinary chancres. The cleaning of the bottom of the sore followed in a remarkably short space of time, and the skinning over of slight losses of substance on the inner surface of the prepuce or on the surface of the glans, was even more rapid than occurred in the cases of sores produced by inoculation. In forty cases thus treated, the mean time was nine and three-fourth days, the longest being seventeen days, the shortest five.

The inoculability of the secretion from the sore was completely destroyed after a continued use of the gastric juice. Neither the semi-transparent layer, nor the pus, which was secreted after the removal of the crust, produced any result, though numerous trials were made with them. To test this matter more thoroughly, the author took the matter from a freshly opened bubo, and mixed one part of it with ten times its bulk of water, acidulated with hydrochloric acid, and another part with ten times its bulk of gastric juice. He then made two series of inoculations. Of the first series, six in number, only one failed to produce a sore; of the second series, all failed. Since then the author has made so many experiments on infectious sores in the most varied places and stages of their development, that his previous views on the action of the gastric juice has been fully substantiated, and it may be said that in a certain sense it acts completely as a caustic. Those parts which contain the inoculable material are completely destroyed and the inoculability of the secretion removed. This result is accomplished gradually, without pain, and by the action of the gastric juice on the ultimate histological elements. After repeated experiments, one acquires a certain skill in determining the depth to which the tissue must be "digested" in order to change the character of an infectious sore into one of a simple loss of substance. As soon as this is accomplished the further use of gastric juice is no longer indicated.

Twice has the author had the opportunity of treating phagedænic chancres in this way. After cleaning the sore it was pencilled several times a day with gastric juice, taken from a dog that had been killed, and in the mean time it was kept in control with a fluid prepared from commercial pepsin. The result was very remarkable. The ill smell disappeared in twenty-four hours, the mortified but still adherent tissues were after two days reduced to a pulpy, grayish yellow mass, and could be removed by charpie, the œdematous and everted borders were brought back to a level with the surface, and on the fourth day, the base of the ulcer was pale but freely granulating, and the phagedæna did not return.

Against condylomata and similar syphilitic formations, the author believes the gastric juice to be of less use. In the case of "plaques" it is necessary to remove the thick epidermic layer covering them; they then rapidly clean off and follow the same course as when treated by other caustics.

The use of the gastric juice as a means of destroying carcinomata and similar formations, is, according to the author, of but little value, the quantity required to destroy a formation the size of an apple even would be enormous, and even then it is doubtful whether the borders of the wound would not give rise to a renewed growth.

The gastric juice derived from a fistula or from a dog that has just been killed, is the most efficacious. The preparation made in Wittich's method with glycerine appears to be less efficacious, but has the advantage that it can be kept for a long time. The commercial pepsin is only fit for use when it has not been mixed with starch.

The author dissolved 1 part of pepsin in 100 or 150 parts of distilled water, and added to the solution five to ten drops of hydrochloric acid and one-half part of common salt. The digestive power of the fluid is then ascertained by immersing in a portion of it some blood fibrin or coagulated albumen, and, if necessary, more pepsin is added to bring it up to the strength of true gastric juice. Its action is then about the same as that of the gastric juice itself, only slower, and it has the advantage of being readily prepared when wanted for use.

Carminati has prepared an artificial digestive fluid by digesting minced veal, uncooked, with water acidulated with hydrochloric acid at a temperature of 100° Fahr., and adding some common salt to the strained liquor. He obtained the same result with it as with the gastric juice. Is it in consequence of the small quantity of pepsin contained in the parenchyma of the muscle?

According to the author, the use of gastric juice or similar fluid is indicated in all cases of sores with an inoculable secre-

tion, as chancres, diptheria, phagedæna and hospital gangrene. It may be also used in case of ulcerated tumors with a fœtid discharge. It operates by digesting the necrosed tissues and thereby destroying their offensive odor. In destroying malignant tumors, it is less effective than the ordinary caustics.

Cases of Hydrothorax Treated by Thoracentesis and by Thoracentesis and Injections of Iodine.

By Roberts Bartholow, M. D.

* * * * * * * * * * * *

No one has more happily than Niemeyer expressed the present state of opinion on the value of thoracentesis in the relief of pleuritic effusions. "Considering our slender ability to excite or even to hasten reäbsorption of pleuritic effusions by means of internal medication, and the discovery that their evacuation by surgical means is attended by much less danger than was formerly supposed, the frequent and early pratice of such operations in cases of pleurisy with effusion, must be considered an important advance in therapeutics. It must be evident that every additional day, during which the lung is exposed to pressure, and the longer the time allowed for cells to multiply in the exudation, so much the more are the chances of complete recovery diminished, and the danger of a fatal termination increased."[1]

We are largely indebted to our own countryman Dr. Bowditch[2] for the more general introduction of thoracentesis. He demonstrated the comparative harmlessness of the operation itself and the marked relief always and the permanent cure that frequently result from its performance.

In England Dr. Hughes in a valuable paper,[3] and Mr. Cock in some observations appended thereto, urged the operation of thoracentesis, for three definite objects:

To accomplish a cure.

To give relief in cases of severe oppression.

To facilitate the cure by other means.

This paper was the more opportune because Dr. Henry Bennet published in the *Lancet* of Dec. 30, 1843, some very discouraging observations on the result of this operation. Famous surgeons, have, it appears, been unfortunate in the performance of thoracentesis. Thus Boyer lost every case, Dupuytren was successful in only two in fifty cases, and Sir Astley Cooper saw only one successful case. It is difficult, in view of the usually good results now obtained, to account for these very unfavorable statistics of the older surgeons.

1. Text Book of Practical Medicine, vol. I, p. 271.
2. Am. Journal of the Med. Sciences, April, 1852, and Jan., '60.
3. Guy's Hospital Reports, 2nd Series, vol. II.

In France the operation of thoracentesis is very frequently and very early performed. The practice at present most in vogue in France, is to evacuate the fluid as soon as it is ascertained to exist in all cases of pleurisy. Dr. C. Paul,[1] Agrégé de la Faculté, in a late paper gives the statistics of 36 cases of thoracentesis in which 31 were cured without any return of the effusion. In a more recent paper, he informs us that he has treated 8 cases of acute pleurisy by early puncture of the chest with remarkable advantage. He mentions a fact not generally known, that when the effusion coagulates after being withdrawn that reaccumulation is not apt to take place. Trousseau[2] to whom the revival of this operation in France is chiefly due, has given an admirable historical account of it in his lectures.

In Germany, much attention has been paid to thoracentesis within a few years. The distinguished Ziemssen of Erlangen, at a recent meeting of the German medical association at Dresden, section of internal medicine, read a paper strongly urging this operation for hydrothorax.[3] Skoda, of Vienna, has long been an advocate of the operation, as has also, Traube of Berlin. In Schmidt's Jahrbücher, vol. 139, p. 175 et seq., there is an excellent resumé of opinions of eminent authorities in regard to the indications for and the utility of this operation. Not to waste further time in these historical references to recent views on this topic, I pass to narrate my own cases.

Case 1.—Mr. Craig, a medical student, came to me in the spring of 1868, with an enormous accumulation in the left pleural cavity. The effusion succeeded an attack of sub-acute pleuritis for which he was treated in the ordinary way. The usual remedies had been employed to secure absorption but without success. The left side was two inches larger than the right; the intercostal spaces were bulging; the heart was displaced entirely into the right side; the respiration was much embarrassed; the pulse rapid and weak; the body emaciated, and a condition of extreme debility existed. The usual physical signs indicating effusion, collapse of the lung and compression of the organ at its root, were present. As the effusion had already existed from the previous September, it was considered probable that the lung was bound down by adhesions. Thoracentesis was performed and a gallon of clear, straw-colored serum was withdrawn, with remarkable relief to the breathing. The heart moved over nearly to its normal position; the superior lobe of the lung expanded somewhat, but as a large cavity remained, a reaccumulation of fluid was

1. Bulletin Général de Thérapeutique, vol. 77, p. 519. Also vol. 81, Livraison 2nd.
2. Clinique Médicale, etc., vol 1., p. 616.
3. Schmidt's Jahrbücher der Gesammten Medicin. Vol. 140, p. 133.

confidently anticipated. In a few weeks Mr. Craig presented himself again, the cavity having filled, but his general health had meanwhile much improved. He was again tapped and three quarts of fluid were withdrawn. Not to weary you with prolix details, I may state that he was tapped fifteen times in the ensuing three years, the interval between each operation regularly increasing in duration. I might hesitate to make these statements, if numerous witnesses had not been present at these operations and heard Mr. Craig's story from his own lips. Nearly a year has now elapsed since the last puncture, and the cure seems to be complete. Considerably more expansion of the lung has taken place than was at first hoped for, but the lung is far from its normal size and expansibility, and the cavity has contracted in all diameters, yet Mr. Craig is in good health and follows a laborious occupation with comparative comfort. In this case I first used a means of treatment which has been lately strongly urged by French physicians. I refer to the injection into the cavity of a solution of ioduretted iodide of potassium. The strength of the solution first used was ʒij of the iodide of potassium, and ʒi of the tincture of iodine to ℥iv of water.

This iodised solution was gradually increased in strength each successive tapping until it reached ʒi of iodide of potassium and ℥iv of the tincture of iodine to a pint of water. The solution of this strength produced a sense of heat in the chest and a decided iodide of potassium taste in the mouth but no other ill result. The advantages of this practice seemed to be most clear, for the accumulation of fluid rapidly diminished, and since the last strong injection, a cure appears to have resulted.[1]

Case 2.—This case occurred in the practice of Dr. Hitt of Greensburg, Indiana. The presence of fluid in the left thoracic cavity was diagnosticated by my colleague, Prof. Graham, and myself. An exploratory puncture confirmed our diagnosis, and the trocar evacuated eight ounces of sero-purulent fluid. Dr. Hitt subsequently drew off several ounces and at my suggestion injected the cavity with the compound solution of iodine. The fluid accumulated the third time, succussion could be easily induced showing the presence of air, and hectic supervened. Spontaneous evacuation of the fluid through the lung then occurred, and a speedy and remarkable improvement of health took place. The subsequent history I have not learned.

Case 3.—A boy aged 12, son of a well known citizen, had some pain in the left side about six weeks ago, which attracted little attention as he had frequently suffered from muscular

1. Dr. Cundell Juler after the details of the case had been read, stated to the Academy that he knew Mr. Craig, had frequent opportunities of seeing the progress of the treatment, and had within a few days heard that he was well.

pains in the same region. About four weeks ago it was observed that he got out of breath on slight exertion, and that he had a slight cough. A homœopathic physician saw him and diagnosticated hepatization and effusion. When I was called the following was his condition: complete flatness on percussion over the whole of the left chest; absence of respiratory and vocal sounds except bronchial voice and respiration over the root of the lung; no increase in size of the chest; no bulging of the intercostal spaces; heart displaced beyond the median line to the right. I advised tapping without delay, for the reasons given so succinctly by Niemeyer. My colleague Dr. Graham, who subsequently saw the case with me, coincided with me in the necessity of this measure. Paracentesis was performed on the next day with an ordinary trocar and forty ounces of clear, straw-colored serum was removed. The lung readily expanded; the heart returned to the normal site; and nothing remained to indicate the lesions except some dullness over the base of the lung, and some friction sound due of course to plastic deposits. Most remarkable improvement in the general condition of the patient took place on the removal of the fluid. Several weeks having now elapsed without the recurrence of the effusion, the respiration and the general health having meanwhile improved, the most favorable prognosis is justifiable.—*The Clinic.*

Practical Medicine.

Carbolic Acid Internally for the Treatment of Diarrhœa and Cholera.

By Dr. C. G. Rothe, of Altenburg, Germany. Translated for the Kansas City Medical Journal.

A Monograph, in German, with the above title, contains an interesting account of Dr. Rothe's experience in detail.

Having had very good results from the local application of the acid to diphtheric surfaces, Rothe was determined to try its antiseptic and anti-fermentative qualities in those digestive disturbances of artificially fed children, dependent on the presence, in the alimentary canal, of fermenting and decomposing articles of diet. (Gastro-intestinal catarrh, and enteritis follicularis).

The first experiments with this treatment were made in the summer of 1870, after having lost a number of children under the ordinary treatment of calomel in small doses, with opium, nitrate of silver, astringents, demulcents, etc.

A babe, nine months old, that had suffered from an obstinate diarrhœa for weeks, with ten to fifteen watery, odorless passages a day, and was reduced to a mere skeleton, was given carbolic acid according to the following formula:

℞ Acidi Carbolici Crystall., gr. iiss.
Spiritus Vini, gtt. x.
Aquae Menth. Pip., ʒv.
Tinct. Opii, gtt. iij.
Mucilag. Gum Acaciae,
[1]Syrupi Papaverum, aa., ʒiij. Misce.
Signa. A teaspoonful every two hours.

During the first twelve hours, the number of passages was reduced to two, though they were still watery. Within the next twenty-four hours they became fecal, and in a week the child was well. Of course this treatment, like any other, implies the necessity, at the same time, of strict attention to diet, by which is meant the entire withholding of milk, and the regular administration of small quantities of mucilaginous drinks, Liebig's food, or other easily digestible and nutritious substances. Following the case narrated above, Rothe treated, in the same manner, forty children laboring under heavier or lighter attacks of diarrhœa, without losing one.

In the year 1871, he applied this treatment to more than fifty children under two years of age, and lost only two of them, one of which, a babe of nine months, had for some time been suffering with marasmus. The medicine was always readily taken by the children, and in those cases where vomiting was prominent (cholera infantum) was so well borne by the stomach that the vomiting usually stopped after the first dose.

Dr. Rothe is far from announcing carbolic acid as a specific against the diarrhœa of infancy and childhood. He only claims for it the power of arresting decomposition in undigested food which would otherwise, by irritation of the intestinal canal, produce watery discharges. In a number of instances, after partial recovery, relapses took place, and here Dr. R. found great benefit from the use of large doses of nitrate of bismuth, as recently advocated in England. He was always, however, obliged finally to return to the carbolic acid again, which, after such an interruption, never failed to complete the cure.

Encouraged thereto by this remarkable success amongst infants, Dr. R., in the summer of 1871, used carbolic acid in all diarrhœas and vomitings of larger children and adults, and is satisfied that no other one remedy will give such uniformly

1. If the Syrup of Poppies is not on hand that of Wild Cherry might be substituted.—ED.

prompt and favorable results. The dose was of course increased proportionately to the age of the patients. In three cases of cholera this treatment proved eminently successful. All three of the patients, two men and a woman, between fifty and sixty years of age were typical cases of the gravest kind, with constant vomiting, copious rice-water discharges, sunken features, cold, clammy skin, loss of voice, cramps in the legs, and small, thread-like, frequent pulse. In all the cases vomiting and purging were arrested after the first few doses, and the patients were well in from two to four days.

Very naturally, Dr. R. recommends a trial of the efficacy of this treatment in case of an epidemic of Asiatic cholera.

Inhalations of Bromine in Diphtheria and Croup.

By Dr. Schutz.

The fact that diphtheritic membranes are more readily soluble in a solution of Bromide of Potassium than in lime water, or other substances usually employed in the treatment of diphtheria, induced the writer, some years ago, to adopt inhalations of bromine in the treatment of this disease. His success therewith has been so good that he again, in some recent numbers of the *Wiener Med. Wochenschrift*, urgently commends it to the notice of the profession. He advises the use of a solution of pure bromine and bromide of potassium, each three tenths of a gramme, to water 150 grammes. A sponge is soaked in this solution, placed in a funnel of stiff paper and held over the nose and mouth for inhalation, just as is done with ether or chloroform, the inhalation being continued for five or ten minutes and repeated every half hour or hour. The odor of bromine, as diluted, is very well borne even by infants. The preparation being highly volatile and decomposed by light, must be guarded accordingly.—*Allg. Med. Central-Zeitung.*

The Therapeutic Application of Bromine.

By Dr. Gottwald, of Berlin. Translated for the Kansas City Medical Journal.

Stimulated by the communications of Dr. Schütz on the subject of bromine inhalations in diphtheria and croup, Dr. Gottwald, (who is assistant to the obstetrical and children's clinic of the Charité Hospital, Berlin,) tried this method in eighteen cases of diphtheria and two cases of croup (distinguished according to Virchow's definition). The strength of the solution and the way of applying it were according to the recommendations of Schütz. (See above.)

The results in the cases of croup were surprisingly successful, especially in one apparently desperate case where tracheotomy was about to be performed. After a brief inhalation, the

excessive dyspnœa yielded, the whistling stridor and barking quality of the cough were lost, and the next morning the patient, a boy ten years of age, was out of danger, having in the mean time coughed up large quantities of ragged membrane.

The cases of diphtheria were all of the very worst type and degree. They all arose either in connection with or following attacks of scarlet fever or measles, and were accompanied by extensive ulceration of the gums, soft palate and tonsils—some of them of the lips and tongue, with suppuration of the lymphatic glands of the neck. Of these eighteen cases, four died; two of them on the day of admission, of broncho-pneumonia morbillosa, which at this time was carrying off many non-diphtheritic children. Of the remaining two deaths, one was convalescing from typhus fever with pneumonia when attacked by diphtheria; the other was in a state of collapse when brought in—tracheotomy was performed, the bromine used, the boy (six years old) rallied and lived six days, then succumbed to purulent bronchitis and gangrenous erysipelas.

In the fourteen cases that survived, there was nothing especially noteworthy in the manner of their recovery, which was quite rapid, considering the gravity of the attack. During the winter of 1870–71, with about the same number of admissions for diphtheria and croup, there were ten deaths in cases where tracheotomy was performed, and several where it was not attempted. Dr. G. attributes the far lighter death-rate of this year chiefly to the use of the bromine inhalations, and therefore urges them upon the attention of the medical fraternity.

Schütz recommends the use of emetics, in urgent cases, in connection with the bromine inhalation. Gottwald did not employ them because they had always been abundantly tried by other physicians before the children came into his hands. He did find, however, that the throwing off of the membrane, as well as the limitation of its spread was favored by a single, early application of the following caustic, fused into a stick, viz: Chloride of Zinc, gramme, 1; Nitrate of Potassa, gramme, 0.2 to 0.4; Hydrochlorate of Morphia, gramme, 0.12. The throwing off of the eschar begins soon and is usually completed by the third or fourth day; the surface beneath is clean and soon heals.

In some cases of angina and stomatitis diphtheritica, Dr. G., in addition to brief inhalations, applied the bromine solution to the parts within reach, by means of a camel's hair brush. This method has the advantage, in small or very weak children, who do not readily spit out the detached membrane, of bringing it away on the brush.

The most careful observation never showed any injurious results to the lungs of the children who inhaled bromine in the strength indicated above. The first few whiffs alone produce irritation enough to cause a cough, which is usually rather desirable than otherwise—after that the breathing is quiet. The more concentrated fumes of the solution, as for instance those breathed directly from the bottle, do cause violent sneezing and coughing.

The success attending the use of bromine in diphtheria of the throat suggested its application in other diphtheritic and gangrenous processes, and a comparison of its action with that of the antiseptics commonly employed in such cases, as the various preparations of chlorine, carbolic acid, permanganate of potassa, etc. The lying-in department of the Charité Hospital afforded an abundant field for experiment.

Since last January, Dr. Gottwald has used a solution of one part each of bromine and bromide of potassium to 400 parts of water, as a local application in the case of sixty puerperal women, suffering from diphtheritic ulcerations of the vagina and mouth of the womb, as well as in some cases of well-marked diphtheritic endometritis. From two to four injections were thrown into the uterus daily, by means of a Braun's syringe or a double catheter; the vagina was injected about once in three hours, by means of an ordinary female syringe; and in case of ulcers at the ostium vaginæ, pledgets of lint wet with the solution were laid between the labia. External contusions, on showing the first evidences of diphtheritic exudation, were usually touched once with the stick of the chloride of zinc. The high fever commonly present was combated by means of quinine and mineral acids, and complications such as pyæmia, peritonitis, pneumonia, etc., treated in the usual manner.

In the uncomplicated cases of endometritis and vaginitis, the results were most favorable—even extensive ulcers rapidly became clean and cicatrized, while fever subsided, and the lochial discharge lost its offensive odor. In those cases, on the contrary, in which pyæmia or septicæmia appeared early, (on the first or second day after labor and before the parts gave any appearance of diphtheritic exudation,) a fatal result was seldom prevented, even though the solution was early and uninterruptedly applied to the genital passages.

It should be remembered, however, that similar cases at other hospitals fared no better, although, in addition to the same general treatment, they were subjected to the systematic local application of various other antiseptics. In fact, the autopsies of puerperal women who died during and after the second week, having been treated locally with bromine,

showed, in several cases, either complete or partial healing of the ulcerations in the vagina and uterus.

Dr. Gottwald has also used the bromine solution in the surgical wards of the children's department, with the best results, especially in some instances where, after amputations, erysipelas set in.

He speaks of the effect of this application on "the diphtheritic surfaces of wounds and ulcers." By "diphtheritic surfaces" he means those which, having previously showed healthy granulations, assume a dry, grayish, lardaceous appearance; on which the secretion of thick, creamy pus is replaced by the scanty exudation of a thin, serous fluid; which, finally, on the forcible detachment of their membranous covering, show an excavated, bleeding, granular surface, which soon covers itself again with a gray pellicle. In these cases he found that on the application of other antiseptics the diphtheritic membrane became harder and tougher and could be lifted off in large fragments; under the use of the bromine, *per contra*, this membrane was softened, liquefied, either spontaneously thrown off in small flocculi or could be readily wiped off, leaving beneath it a fresh, red, normally suppurating surface.

The continued application of carbolic acid to a well-granulating, pus-secreting surface, is, according to G., often followed by an arrest of the healing process—the granulations become pale and cicatrization stops—under similar circumstances, with the use of the bromine solution, the granulations maintain their healthy appearance and the formation of the cicatrix is seen to progress without interruption.

A Case of Opium Poisoning.—Artificial Respiration the Means of Saving Life.

By CHARLES E. SMITH, M. D., and H. C. HAND, M. D., St. Paul, Minnesota.

C. W., æt 24, having been in trouble and drinking freely for several days, on the 4th of April, 1872, drank more freely than before. At 7 P. M. he went to his room, where his brother found him at 7.30, sleeping soundly. Becoming alarmed at 8.30 by his heavy breathing, his brother attempted to wake him, but failed, and in his attempts discovered a two ounce vial containing half an ounce of laudanum.

Dr. D. W. Hand, Dr. C. H. Boardman, and ourselves were summoned, and arrived at about 9. At this time shaking, slapping, pricking, etc., were in no way heeded. His muscles were perfectly relaxed, his face livid, pupils contracted, extremities blue and cool, respiration slow and noisy, pulse full and slow.

The stomach-pump was immediately used and the stomach thoroughly washed out. It was evident from the character of contents obtained, that most of the laudanum had been absorbed.

One forty-eighth of a grain of atropia was administered hypodermically at 9.45, and one twenty-fifth of a grain at 10.15. By this time the respirations had become very infrequent (four to a minute), irregular and shallow. The poles of a magneto-electric battery were applied over the phrenic nerve in the neck and around the base of the chest. The respirations were quickened and improved for five or ten minutes, and then lapsed into their former state. A noticeable point was that, when the face became very livid and the lips very blue, one deep inspiration, followed by three or four progressively more shallow ones, would occur, brightening the color, after which almost a minute would elapse with no attempt at respiration. During this time the face again became livid, and then the same process would be repeated. About 10.20 all attempts at natural respiration—which up to this time had been maintained by the stimulus of the battery—almost entirely ceased, and the pulse failed in strength. Artificial respiration was resorted to, and under its influence the color of the surface and the character of the pulse soon improved. At 11 a Hall's battery was tried, which caused respiration unaided by artificial methods for five minutes; at the end of which time it failed entirely, and artificial respiration was resumed and steadily continued until 1.30 A. M. The pulse remained from 9 o'clock to 11 o'clock quite full and strong so long as the respiration was efficiently continued, but became irregular, weak, and fluttering as soon as it was remitted even for a minute. About 1.30, however, the artificial respiration proved less effective, and a much greater effort was required to force the air from the lungs, and a greater length of time for them to fill. The pulse ran up to 120, became intermittent, and then almost imperceptible. A brisk current from the magneto-electric battery was reäpplied, with the effect of at first making artificial respiration more easy, and then establishing natural respiration, which at 2 o'clock continued unaided by the battery, at ten to twelve respirations per minute. Flagellations were kept up constantly until 4 o'clock, when the patient could be made to walk a step or two, but would immediately afterwards drop down fast asleep. At 6 o'clock he was delirious, but could be roused to answer questions.

For the two succeeding days he had very considerable congestion of the lower lobes of both lungs, and later a severe bronchitis with a pleurisy of the right side.

To recapitulate, the points of interest about this case are—1. That one and a half fluid ounces of laudanum were taken, the most of which was absorbed. 2. The hypodermic injection of one-sixteenth of a grain of atropia dilated the pupils widely, but had *no effect whatever* on the pulse, respiration, or color of

the skin. 3. The magneto-electric and faradaic currents were each found more useful for being intermitted and alternated. Benefit was also noted from occasionally shifting one pole from over the position of the phrenic nerve to the spinal column. 4. By far the most important remedial measure used was ARTIFICIAL RESPIRATION. During three hours it was continuously persevered in, with the constant hope that natural respiration would come to our relief. Twice in this time an attempt at such respiration became apparent. This, favored by the use of the batteries, continued each time about five minutes, when it ceased, and the pulse became small and fluttering. For these three hours of vital importance, death was kept from assuming his dominion only by rythmical breathing performed mechanically for the patient, not by him. At the close of the third hour, the vital forces—the heart's action especially—were failing in spite of the artificial respiration, and it seemed almost certain that this means could preserve life but little longer. Magneto-electricity, with unexpected efficacy, now furnished the stimulus needed to strengthen the heart and elicit those first evidences of return to life so grateful to his almost hopeless attendants. The method of respiration used was Sylvester's, with an occasional change to that recommended by Dr Benjamin Howard.* Both methods were efficient; the change from one to the other was beneficial, because in this way the operator obtained a little rest, and because deeper respirations could be forced on making the change after the chest had become accustomed to one method.

In conclusion, we might mention another case of opium-narcotism in a young woman, which was nearly as profound as this, and in which we had the satisfaction of seeing signs of life return after a steady perseverance in artificial respiration for an hour and a half. Five grains of morphia had been taken and retained three hours before she was seen. When we first saw her, there was only an occasional respiration, which soon entirely ceased. The stomach-pump could not be used, for we did not dare to intermit the artificial respiration long enough for it. No atropia and no electricity were used.—*Med. Times.*

Gangrene of the Lung.

BY PROF. E. LEYDEN.

Prof. E. Leyden, of Königsburg, contributes a paper on this subject to Volkmann's "Collection of Clinical Essays" in which he remarks that in gangrene of the lung the sputa exhibit to the physician the anatomical changes taking place in the organs affected, an advantage that is possessed but in a minor

* For a full description of which, see *Philadelphia Medical Times*, vol. II. page 154.

degree by the urinary secretion alone, in cases where the kidney is affected. Traube has drawn a definite distinction between the putrefaction taking place in the bronchial secretions and that accompanying the disintegration and ulceration of the pulmonary tissue—in other words, between putrid bronchitis and putrid disease or gangrene of the lung. The differential diagnosis is based principally, though not exclusively, upon the character of the sputa. "The disgusting odor of the sputa, their large quantity, their dirty, greenish-yellow colour, their disposition to form three layers—an upper, greenish-yellow, opaque, and foamy; a middle, translucent, albuminous, and of serous consistence; and a lower, of yellow colour, opaque, and having all the aspect of a pure deposit of pus and the detritus of pus-corpuscles—and lastly, the presence in them of dirty yellowish-white, pappy, soft masses, varying in size from that of a hemp-seed to that of a bean, and with smooth surface and extremely fœtid odor, in which Virchow first pointed out the presence of acicular crystals of fat—are all appearances that may occur both in chronic bronchial catarrh with bronchial dilatation and in gangrene of the lung. The presence of such sputa proves nothing, except that generally a disintegrating process is taking place in the respiratory apparatus. The question is, whether this disintegrating process occurs within the intact bronchia, or is associated with destruction of the parenchyma of the lung."

The surest proof of the destruction of the lung-parenchyma is obtained from the presence of fragments of the parenchyma, that is to say, of pieces of the broken-down tissue of the lungs. Traube describes such fragments as being of a greyish yellow color, with villous margins, of dirty aspect, and when viewed under the microscope as composed of an elastic transparent colorless matrix, in which much finely granular detritus is distributed, numerous yellow fat-drops, masses of black pigment, and many large acicular crystals of the fatty acids. Elastic tissue is never present, according to Traube, but it was observed in Oppolzer's clinic on several occasions, and in two cases the fibres were disposed in a mode corresponding to the arrangement of the alveoli. The rod-like and round vibrios constantly observed by Leyden and Jaffe to be present in the shreds of gangrenous lung and in the putrid sputa, are undoubtedly associated with the chemical process of decomposition taking place in the lungs, though it is uncertain whether the fungus is the cause or merely the accompaniment of that process. Jaffe found that volatile fatty acids were present, and in particular butyric and baldrianic acids; in some, but not in all instances, ammonia and traces of sulphuretted hydrogen; with leucin, tyrosin and traces of glycerin. The process is, in fact, quite analogous

to the ordinary process of putrefaction. Other general symptoms of gangrene of the lung are that fever, usually of an asthenic type, is present; the most severe cases terminate most rapidly in a typhoid state; cough is also a common and troublesome accompaniment, and leads in some cases to the bursting of a blood-vessel; the debility of the patient is such that he is always confined to bed, or should be so; pleurisy is commonly set up, as in the progress of the disease the portion of lung affected approximates that membrane. In regard to the etiology of gangrene of the lung, it develops from a great number of pathological conditions, as well as from pneumonia, which was formerly regarded as the only cause. This happens especially in debilitated subjects, old people, drunkards, and where the early stages have been neglected. In such cases the consecutive gangrene is usually diffuse. It may develop also on the side of the vessels, as from emboli, which are themselves the carriers of a putrid process. This occurs most frequently in surgical and puerperal pyæmia. A relatively frequent cause of metastatic (embolic) gangrene is the thromboses that occur in acute diseases, as in typhus, recurrent fever, and small-pox. A rarer form is that associated with caries of the temporal bone. It may arise again on the side of the bronchi, in those cases where foreign bodies have entered the trachea, such as cherry stones, fragments of bone, or the matter of an abscess which has formed in some adjoining part (retro-pharyngeal abscess, abscess of the vertebræ, or of the liver); more frequently still, it results from the perforation of an œsophageal cancer in one, and in the most part the right, bronchus; and occasionally, as Dietrich has shown, from the retention of bronchial secretion in bronchial dilatations and other normal cavities, and even, though extremely rarely, in tuberculous vomicæ. Lastly, it may arise from injury, as from stabs and contusions.

The duration of the affection is several weeks, even in slight cases, and severe cases may extend over several months. Between a fatal issue, which usually occurs accompanied by the phenomena of a septic fever, and recovery, a third state may be noticed—that of incomplete recovery—in which the gangrenous ulceration gradually ceases, though a cavity lined by a pyogenic membrane remains; this furnishes a purulent, thin, fluid secretion, and relapses or exacerbations of the disease are easily induced by exciting causes. Gangrene of the lung is undoubtedly a serious affection, but it is too much to say, as Niemeyer does, that recovery is exceptional. Laennec observed several cases where large gangrenous caverns had formed. He treated the disease with leeches, cold poultices to the head, sinapisms, and blisters, and internally with mixtures containing ipecacuanha, laudanum, musk, etc. Skoda obtained more favorable results

from his mode of applying turpentine inhalations. Turpentine, however, has only very slight disinfecting properties, and objections may be raised to most other methods of treatment by inhalation. Thus, chlorine water when inhaled, immediately produces violent coughing; permanganate of potash is so easily decomposed that little or none enters the smaller bronchi, even much less reaches the gangrenous mass. Inhalations, however, of carbolic acid solutions containing from two to four per cent. are of service when employed from one to three times daily, or the same acid may be taken in small doses internally, its disagreeable odor and flavor being covered by mint water. In the latter form it acts partly by the local disinfection of the sputa, and partly by absorption into the blood. Brown discoloration of the urine indicates when the acid is being carried too far. Alcohol may be prescribed, and is sometimes required, in very large doses. Prof. Leyden mentions the Hungarian wines as of special value on account of their strength. Traube recommends acetate of lead, in doses of from half to one grain every two hours; and when the febrile symptoms have considerably abated, one to two grains of tannic acid every two hours. A few doses of quinine should be intercurrently ordered in quick succession. As a general rule, tonics and liberal diet are indicated. The symptom which demands special attention is the cough, as the putrid materials have to be eliminated by this means. Leyden only prescribes opium when there is much disturbance of the rest: during the day none should be given, but various forms of expectorant remedies may be used.—*Med. Chirur. Rundschau*, März 1872.—*London Practitioner.*

On the Use of the Pulvis Glycyrrhizæ Compositus, a Laxative Preparation of the Prussian Pharmacopœia.

By David Page, M. B. Edin.

The want of a mild but effective aperient, of convenient form, and without any of the disagreeable concomitants of most preparations of this class, frequently confronts the physician when he casts about him to meet a case of simple constipation with what he cannot readily discover, a pleasant remedy. "Cite, tute, et jucunde," may be said, I think, of the way in which the elegant preparation under consideration acts.

About two years ago I became acquainted with the compound liquorice powder through Dr. J. Warburton Begbie, and since then I have, I may say, daily tested its efficacy as an excellent laxative medicine.

The majority of cases of constipation arise from simple or functional derangement, and perhaps in all of these a loss of power or atony of the colon is the faulty source.

In the aged, this condition is properly coincident with the gradual cessation of activity generally in the bodily functions; but in the young, more avoidable or accidental causes are at work, such as sedentary habits, irregularity, debility from illnesses, and the like.

With regard to other cases of constipation, which can be traced to a deranged state of the upper intestine, catarrhal conditions are most frequently observed, and I have met with no more inveterate instance of this sort than those occurring in patients whose rule of life seemed to embrace the persistent use of the numberless quack purgative nostrums.

I may with truth remark, in passing, that in England at least, more disorders of the primæ viæ come under the eye of the physician from this one cause than from all the natural and inimical agencies put together.[1]

For the treatment of simple constipation resulting from atony of the bowel, the compound liquorice powder is admirably adapted. Whether in simple uncomplicated torpor of the intestines, or in constipation accompanying temporary gastric disorder, the powder, alone or auxiliary to appropriate remedies, is preferable to other preparations of its class. In the former, our object is rather to call into play the peristaltic action of the intestine than to deplete by serous transudation from its walls, and, in the latter especially, no prudent practitioner would run the risk of aggravating the disordered stomach by the exhibition of purgatives possessed of irritant or drastic properties. The compound liquorice powder is composed of the following constituents, so prepared as to form when incorporated, an almost impalpable powder:—Senna leaves, ℥ vj; liquorice root, ℥ vj; fennel seeds, ℥ iij; sulphur, ℥ iij; refined sugar, ℥ xviij.[2]

The active ingredients are sulphur and senna. The action of the former, when administered alone, is frequently accompanied by tormina, and its continued use is apt to cause derangement of the mucous membrane of the upper intestine. The physiological action of sulphur appears to be upon the muscular coat, and less upon the mucous surface, while senna is a more active purgative, more apt to excite tormina, and acts more upon the mucous than the muscular coat. By the aromatic and stimulant properties of the fennel, and the demulcent action of the liquorice, itself a mild laxative, the effects of the more active constituents are judiciously modified.

1. In the fourth volume of his Clinical Medicine, speaking of constipation, Trousseau remarks: "The use of these pills, (aloes, colocynth, gamboge, and rhubarb) is certainly *less* injurious than is generally supposed; and the abuse of them in England shows that we, on this side of the channel, are inclined to exaggerate their evil effects."

2. This formula is given in the Pharmacopœia Borussica.

The usual dose is a small teaspoonful at bed-time, in water, with which it is easily mixable, forming an agreeable draught. Children to whom Gregory's powder is a terror, readily take it with the belief that it is a sweetmeat.

That the action of the powder is not to produce catharsis with serous transudations is proved by the motions, which are usually well-formed and soft.

It is not my intention to enter into details of individual cases, but I cannot refrain from alluding to one instance as illustrative of a group where its use is preferable to other forms of purgative remedies.

Two years ago I saw with a practitioner in York a maiden lady, seventy years of age, who for some time had suffered from general paresis, as indicated by ptosis of both eyelids, defective eyesight, habitual constipation, and difficulty of deglutition, especially of solids. I found that the taking of pills was to her a constant source of dread and annoyance, and suggested the compound liquorice powder, the adoption of which proved so pleasant and satisfactory that it was afterwards taken to the exclusion of the pills.

I have said that constipation most commonly results from functional derangement. Constipation connected with the simpler forms of structural disease, such as piles, fissures of the anus, and prolapsus, is also effectually treated by the powder; and in those grave cases, happily less frequent, but the saddest of all that the physician is called upon to treat, where structural changes within or without the bowel are slowly but surely encroaching upon its calibre, the constipation that gradually appears may for a time find relief in the same manner; although at a later stage, when the symptoms, formerly obscure, become so developed as to afford certain proof of the existence of an invariable obstruction, we must desist from harassing the patient with general remedies, and fall back upon the forlorn hope of local means.

In the early stages of hepatic disease, when the tympanitic state of the bowels masked long-existing ascites, and on the treatment of which Dr. Basham has lately contributed papers to the *Practitioner,* I have found the use of somewhat larger doses of the compound liquorice powder, twice a week or so, equally beneficial, and in my opinion preferable to that of mercury, jalap, colocynth, or podophyllin.

The general treatment of constipation must not be lost to view; and while the use of any purgative whatever can only rank as a temporary expedient, the all-important observance of a well-arranged dietary, exercise, and habits of regularity, must be considered of paramount necessity in the attainment of permanent relief.—*London Practitioner.*

THE KANSAS CITY

MEDICAL JOURNAL.

Editorial.

"Oh that mine enemy would write a book!" cried the wise King of Israel, nearly three thousand years ago. It may require all the opportunities bound up in a many-paged volume to betray the weakness or folly of some men, but there are mortals, perchance of smaller calibre, who can seal their own doom within the narrow limits of a valedictory address. Such is the sad lot that befell the late President of the American Medical Association at its meeting in Philadelphia. Without any provocation thereto, he deliberately went out of his way to rush upon his ruin.

Probably the distinguished gentleman imagined that his audience, and the profession throughout the land, would feel immensely flattered at being patted on the back by no less a personage than David W. Yandell, and told that the only trouble with American doctors was their being in danger of knowing too much, and that these German enthusiasts, spending a life-time in the solution of some scientific question, were unpractical *nothingists*, not to be compared, for real value, to a Kentucky cross-roads pill-peddler.

How sadly Dr. Yandell erred in judgment, must, by this time, be apparent even to him, as he has seen, from month to month, the increasing tide of regret, reprobation and ridicule which has greeted that pitiable Philadelphia speech, over the length and breadth of the land.

Perhaps the less said about it the better, but this Journal cannot forbear briefly to put itself on record against such professional lampoonry.

ACID REACTION OF COWS' MILK.

In an article on the Treatment of the Diarrhœa of Infancy and Childhood, (p. 218 of this number,) Prof. W. C. Evans, of this city, states that experiments have inclined him to the opinion that "the greater part of the milk of cows, in this vicinity, gives an acid reaction at the time it is milked." Struck by this statement, we immediately commenced testing the milk of all the cows in our neighborhood, and distributed test paper to a number of intelligent families in our practice, who keep cows. The result so far, in the case of twelve cows, taken at random, has been *an invariably acid reaction given by the milk at the time of milking.*

We do not consider our experiments sufficiently extended, as yet, to be of much positive value, but it may very readily be that Dr. Evans' discovery accounts for the fact that many bottle-fed children, who do well further East, relapse into disturbances of digestion the moment they are brought back to this section of country. We earnestly invite observation and reports on this subject from medical men East and West.

SYRUP OF THE LACTO-PHOSPHATE OF LIME.

In compliance with the request of a number of our subscribers, we give below the formula for the preparation of the syrup. Since our attention was called to the value of the preparation, (see article from the *London Practitioner*, on page 108, Vol. I., No. 2, of the KANSAS CITY MED. JOUR.,) we have used it somewhat extensively in our practice, and always with the happiest results, especially in those aggravating cases of

irritable stomach where it is hard to keep anything down. To prepare the syrup, take concentrated lactic acid, ʒi., dilute with ʒii. of pure water, add of the magma of freshly precipitated phosphate of lime, enough to saturate; of orange flower water, ʒiss. Filter. Finally, add pure water to make up an ʒviii. mixture, and ʒxi. of white sugar.

No heat is to be employed.

Each drachm contains from two to three grs. of the dry phosphate of lime.

Dose: For an adult, one to two tablespoonfuls three or four times a day.

Reviews.

CLINICAL LECTURES ON THE DISEASES OF WOMEN. By Sir James Y. Simpson, Bart., M. D., D. C. L., late Professor of Midwifery in the University of Edinburgh, with 142 illustrations. 8vo., pp. 789. New York: D. Appleton & Co., 1872.

This book of Clinical Lectures on the Diseases of Women, edited by his son, constitutes Vol. iii. of the works of Sir James Simpson, now in course of publication by Appleton & Co.; the first American from the first British edition. The profession will welcome it heartily. We never cease to wonder at the amount of mental labor some men perform, and the genius that enabled the great Edinburgh Professor, in the midst of arduous professional duties, to invent, to discover, to lecture, to write: that is, to amass and dispense such a wealth of information upon all scientific subjects as marked his eventful life, is simply wonderful. Nothing but a mind of the rarest type could have accomplished, nothing but a commanding genius would have dared so much. The spirit of earnest inquiry and masterly judgment that infused itself into every undertaking, fettered only by the limits of the possible, is seen most clearly in his contributions to gynecological science and art. It is not too much to say of him that among the gifted ones of our profession who have of late years sought to wrest the treatment of diseases of woman from the hands of the pretender, and give it dignity and a scientific basis, Sir James Y. Simpson stood almost without a peer.

The present volume, in the form of fifty lectures, covers the whole ground of woman's diseases. It embodies the varied experience of a long life, rapidly nearing its close; the ripe judgment of mature age; a sort of summary, in the simplest language, of his great life-work. Original and suggestive, like the works of some of the old masters in medicine, it will live to invoke alike the mild censure and discriminating praise of enlightened generations to come. For the present, upon most subjects of surgical interference, it is the highest authority known, and no physician who chooses to acquaint himself with the present state of knowledge of this class of diseases can afford to be without this volume of the great Scotchman.

THE PHYSIOLOGICAL AND THERAPEUTICAL ACTION OF THE BROMIDE OF POTASSIUM AND BROMIDE OF AMMONIUM, in two parts, by EDWARD H. CLARK, M. D., and ROBERT AMORY, M. D. 12 mo., pp. 178. Boston: James Campbell, 1872.

That portion of the work relating to the physiological action of the bromides has appeared before as a monograph from the pen of Dr. Amory, first published in the transactions of the Massachusetts Medical Society. It contains, therefore, nothing new at this date. Dr. Clark's paper on the therapeutical value and employment of the drugs in question is valuable.

Much has been written about the bromides during the past few years, and "the end is not yet." Dr. Clark's paper on the subject is the most systematic and practical one that we have yet seen. He says in his introduction: "The number of essays that have lately appeared, both in this country and Europe, on the bromide of potassium and kindred salts, attests the importance which it holds in the present Materia Medica. This importance is my apology for burdening the medical public with an additional paper, etc., etc. * * * * * * I am glad to contribute my mite towards an exact knowledge of the therapeutical application and just value of so important an article. The paper is not exhaustive. It is only a contribution." The reviewer would not take a good deal for what this modest "contribution" has taught him about the use of the bromides.

EARTH AS A TOPICAL APPLICATION IN SURGERY, Being a full exposition of its use in all the cases requiring topical applications admitted in the men's and women's Surgical Wards of the Pennsylvania Hospital during a period of six months in 1869, by ADDINELL HEWSON, M. D., one of the Attending Surgeons. 12 mo., pp. 309. Philadelphia: Lindsay & Blakiston, 1872.

Some of our readers will remember a clinical lecture, by Dr. Hewson, published in the JOURNAL for Aug., 1871, from the *Philadelphia Med. Times*, in which he sets forth the advantages of the

earth dressing in severe burns. This article attracted some little attention, and the Editor of the JOURNAL was repeatedly asked by medical men in the surrounding country for specific information in regard to the quality and preparation of the earth and the method of its employment.

To those thus interested in the earth question, it will be enough to known that Dr. Hewson has published a book containing the information they desired and much more that is of interest and value.

As may be seen from the title, the earth dressing was used in *all* the cases requiring topical applications that were admitted to the surgical wards of the Pennsylvania Hospital during six months, and the result reported. This appears to have been, in all cases, remarkably satisfactory.

We have not room to give extracts from this most interesting little volume, but would earnestly commend its purchase to every one who practices surgery. No intelligent man, having read Hewson's work, will fail to give earth dressings a trial, and thus do a great benefit to himself as well as his patients.

Miscellany.

KANSAS CITY COLLEGE OF PHYSICIANS AND SURGEONS.—The next session of this school opens on the 16th of September, and lasts *six months*, giving nearly two months more to instruction in the regular course of study than is usual in medical schools. By thus extending the lecture term, the Faculty of this College give their students a better opportunity for "reading up" as they go, and in every way making their course of study more thorough and satisfactory.

A HÆMORRHOIDAL SUPPOSITORY.—Dr. Henry M. Field, Newton, Mass. (*Journ. Gynæcological Soc.*), recommends this formula for a suppository in hæmorrhoidal cases: ℞. Acid. tannic., gr. v.; Ext. belladon., gr. ss-j.; Butyr. cacao, q. s.

NEW METHOD OF MAKING BEEF-TEA.—Dr. H. C. Wood (*New Remedies*, April, 1872) has invented the following process for making beef-tea; Take a thin rump-steak of beef, lay it upon a board, and with a case-knife scrape it. In this way a red

pulp will be obtained, which contains pretty much everything in the steak, except the fibrous tissue.

Mix this red pulp thoroughly with three times its bulk of cold water, stirring until the pulp is completely diffused. Put the whole upon a moderate fire, and allow it to come slowly to a boil, stirring all the while to prevent the caking of the pulp. As soon as it has boiled remove from the fire. Season to taste. In using this do not allow the patient to strain it, but stir the settlings thoroughly into the fluid. One to three fluid ounces of this may be given at a time.

CHOLERA REMEDY.—*New Remedies* for April, 1872, contains the following cholera prescription, a favorite one of Dr. H. Hartshorne, of Philadelphia:—℞. Chloroform, Tinct. opium, Spts. camphor, Spts. ammonia aromatic, āā f ʒ iss.; Creasote, gtt. iij.; Oil of cinnamon, gtt. viij.; Brandy, f ʒ ij. Mix. Dilute a teaspoonful with a wine glass of water, and give two teaspoonfuls every five minutes, followed by a lump of ice.

BOOKS RECEIVED.

A YEAR-BOOK OF THERAPEUTICS, PHARMACY and allied Sciences. Edited by Horatio C. Wood, Jr., M. D., Prof. of Med. Botany University of Pennsylvania, etc., etc. 8 vo pp. 350. New York: Wm. Wood & Co,, 1872.

DISEASES OF THE THROAT: A Guide to the Diagnosis and Treatment of Affections of the Pharynx, Oesophagus, Trachea, Larynx and Nares. By G. Solis Cohen, M. D. 8 vo pp 382. New York: Wm. Wood & Co., 1872.